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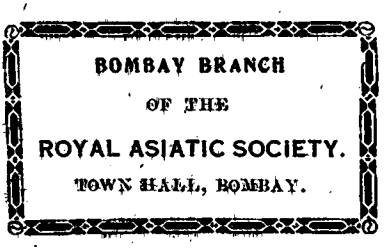

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SUPPLEMENT

TO THE

ENGLISH BOTANY

OF THE LATE

SIR J. E. SMITH AND MR. SOWERBY.

THE DESCRIPTIONS, SYNONYMS, AND PLACES OF GROWTH

BY

WILLIAM JACKSON HOOKER, LL.D.

REGIUS PROFESSOR OF BOTANY IN THE UNIVERSITY OF GLASGOW,

F.R.S. F.S.A. L.S. &c. &c.

AND OTHER EMINENT BOTANISTS;

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THE FIGURES BY

JAMES DE CARLE SOWERBY, F.L.S. &c.

". . . . jam tempus equûm fumantia solvere colla." VIRG.

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VOL. II.

LONDON:

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1834.

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PREFACE.

DURING fifteen years which elapsed after the conclusion of the 'ENGLISH BOTANY,' so many additions were made to the list of indigenous flowering plants, that a Supplement was become highly desirable, and indeed necessary, to render that work tolerably complete; so that an apology is hardly necessary for the two volumes now laid before the Public. The acknowledged merits of the original work have always stood so high, that the conductors of the Supplement felt it to be a bold task to attempt its equal; and deprived as they were of the high and elegant abilities of their lamented friend Sir J. E. Smith, they sought the assistance of several of the most able British Botanists, and were not disappointed, for not only were plants and descriptions most liberally supplied, but in some cases excellent drawings.

It is then to Dr. Hooker and W. Borrer, Esq., who have most essentially supported them, and to Messrs. Forster, Wilson, D. Don, and several other excellent Botanists, whose communications although not so numerous have been highly valuable, that Messrs. Sowerby are indebted for having, as they hope, attained their object; if not wholly, yet at least as nearly as was practicable; and to whom they must be allowed this opportunity of publicly expressing their deep-felt gratitude. It is needless to say more of the plates

than that they have been produced under the superintendence of the same person who executed many of the plates of the original work, and who has endeavoured to sustain the credit of the name and his rank as an Artist.

This Supplement is at present limited to two Volumes, not because the materials are wholly exhausted, but because that, without introducing a very large proportion of Cryptogamic plants, there appears but little hope of being able to produce a third Volume in any moderate time; and it must be acknowledged that these are not so generally interesting as to be required by every possessor of the 'ENGLISH BOTANY,' as essentially necessary to it. In all probability they will hereafter form a separate publication. The few flowering plants which are at present considered British but not to be found in this work, are doubtful either as species or as natives: but drawings of them and of any others that may be discovered will be carefully prepared, with a view of adding them to this Supplement whenever their number shall appear sufficient. It is to be feared that from want of experience those descriptions signed J. D. C. S. may not be so perfect as could be wished. The writer was led in the first instance to undertake them in consequence of some difficulties which occurred in getting the work through the press, and he craves indulgence upon the ground of his having endeavoured to be at least correct, if he could not always add to the information previously published.

Camden Town, Dec. 6, 1834.

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June 1st 1831.

VIOLA Curtisii.

Yellow Sea Pansy.

PENTANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-leaved, lengthened out at the base. *Pet.* 5, irregular, the lowermost spurred behind. *Anthers* slightly cohering. *Caps.* superior, of one cell with three valves.

SPEC. CHAR. Stem decumbent, angular, rough. Leaves oblong, crenate, naked. Leafstalks hairy. Stipulas palmate; lobes acuminated, ciliated. Bracteas minute. Spur the length of the calyx.

FOUND on Braunton-boroughs in Devonshire in great abundance, where it was gathered by the late William Curtis, and introduced into his garden by the name of *Viola littoralis*. This name having since been given to another species, an opportunity is afforded of commemorating the accurate and discriminating author of the *Flora Londinensis*, the original discoverer of this pretty little Pansy, which enlivens the turfy spots of the Boroughs by its delicate yellow flowers, seldom rising much above two inches, though on a bank towards the sea it grows more luxuriantly: it also occurs sparingly on a wall on the opposite shore of Instow, at the junction of the rivers Taw and Torridge with the ocean. I have a specimen gathered in Ireland by Mr. Joseph Woods, which appears to me to be the same.

Roots fibrous; stems purplish, decumbent, branching at the root, simple above ground, leafy, angular, rough with minute short hairs. Leaves alternate, stalked, oblong, crenate, smooth, not ciliated. Leaf-stalks hairy. Stipulas large, palmate; lobes narrow, terminated by a point, ciliated,

strongly nerved. Flower-stalks one or two, axillary. Flowers small; petals scarcely longer than the calyx, yellow, with blackish branched radiating lines, the lateral paler than the lower, the upper whitish.

This may be distinguished from *Viola lutea*, *Engl. Bot.* *t.* 721, by the corolla not being above half the size, by the minute roughness of the stem, by the want of hairs on the edges of the leaves, and by the nerves being more strongly marked on the back of the stipulas, and less regular; and from *Viola tricolor*, (with which it agrees in the leaves not being ciliated,) by the narrow lobes of the stipulas, as well as by a very different mode of growth.—E. F.

RUMEX alpinus.

Alpine Dock, or Monk's Rhubarb.

HEXANDRIA Trigynia.

GEN. CHAR. *Cal.* of 3 leaves, combined at the base. *Cor.* of 3 petals. *Stigmas* multifid. *Nut* triquetrous, covered by the enlarged petals, which often bear tubercles.

SPEC. CHAR. Flowers monœcious. Enlarged petals cordate, reticulated, obscurely toothed at the margin; one bearing a small grain. Leaves broadly cordate, ample. Whorls leafless, crowded.

SYN. Rumex alpinus. *Linn. Sp. Pl.* 480. *Campd. Rum.* 105. *Hook. Br. Fl.* 168.

Rumex cordifolius. *Horn.—Reichenb. Iconogr. Bot. t.* 487. (excellent).

LINNÆUS well observes of this plant, "Statura et magnitudo Rhei." Hence probably, aided by the domestic use of the root, it has obtained the name of *Monk's Rhubarb.* This species was not admitted to a place among our native plants till the publication of our *British Flora*, and it was so done on the authority of the Rev. M. J. Berkeley, who found it, in 1824, by the side of the Fruin-water of Bannachra, Dumbartonshire; and because we ourselves found it in a situation, as apparently wild, in the same year, in the valley formed by the Gare Loch, separated by a high chain of mountains from the station of Mr. Berkeley.

It is perennial, flowering in July; is remarkable for the large and very broadly cordate, obtuse, or even retuse, lower leaves, downy on the underside upon the nerves and reticulations. The upper ones are small and ovato-lanceolate,

often unequal at the base. Panicles branched, bearing numerous whorls of drooping flowers, which are monœcious. Enlarged petals cordate, waved and somewhat toothed at the margin, reticulated, one bearing an oblong, not very evident grain. Nut ovate, acutely triquetrous, pale brown.

Our figure is taken from specimens gathered near the Gare Loch, Dumbartonshire. Perfect fruit was obligingly communicated by Mr. Henderson, of Milton, Peterborough, from plants sent from Glen Fruin.—W. J. H.

The leaf is here reduced in size.

Jungermannia planifolia.

June 1st 1831.

JUNGERMANNIA planifolia.

Flat-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Common *receptacle* of the fruit none. *Perianth* or *Calyx* monophyllous, tubular (rarely wanting). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Stem erect, nearly simple. Leaves unequally two-lobed, bipartite to the base, dentato-ciliate; lobes conduplicate, quite plane; the lower ones larger, ovate; the upper ones cordate, obtuse.

SYN. Jungermannia planifolia. *Hook. Brit. Jung. t. 77. Hook. & Tayl. Musc. Brit. ed. 2. 232.*

THIS may well be considered among the rarest of the British species of the beautiful genus *Jungermannia*. Its first discovery is due to the late Mr. Don, who detected it upon Ben-y-mac-duich (or davie, as Mr. Don spells it), the second highest mountain in Scotland, in 1812. In the following year Dr. Taylor gathered it upon Brandon mountain in the west of Ireland, and in March of the present year Mr. W. Wilson found it in Cwm Idwell, North Wales, after having gathered it in its Irish station the preceding autumn. Mr. Arnott and myself met with the plant, in an excursion we lately made, among moist rocks at the head of Loch Avon; but as one of the shoulders of Ben-y-mac-duich may be considered to extend to this spot, it is probably the same with Mr. Don's habitat; and it was there growing in the greatest profusion, intermixed with the still more rare

Jung. Doniana. Mr. Wilson observes that it yields a fetid smell like that of Castor.

The stems, which are 4—5 inches long, and simple or slightly branched, grow loosely tufted, and often mixed with other Jungermanniæ and with mosses. The leaves are closely placed, bifarious, vertical, cut to the very base into 2 unequal conduplicate appressed and flat lobes, so deeply indeed that they might with more propriety be considered two distinct leaves instead of lobes, the longer ones inferior and imbricating the lower side of the stem, ovate, and horizontally patent; the upper ones obliquely imbricated, cordate; all of them of a deep purplish brown colour, plane, marked with close reticulations, and beautifully fringed with tooth-like cilia at the margin. The fruit is wholly unknown to us.

In habit the present species will rank assuredly near *J. nemorosa*, but may be at once known from it by a much greater size, more rigid texture, deep purple colour, and above all by the separation, if I may so speak, between the upper and lower lobes of the leaf; so that the upper or lesser lobe has all the character of a stipule.

The specimens here figured were kindly communicated by W. Wilson, Esq., from Brandon, Ireland.—W. J. H.

Orthotrichum anomalum.

June 1st 1831.

ORTHOTRICHUM anomalum.

Anomalous Orthotrichum.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* terminal. *Peristome* of 16 teeth in pairs, and usually with the same number of intermediate ciliary processes lying horizontally. *Calyptra* mitriform, furrowed, more or less hairy.

SPEC. CHAR. Stems erect, leaves broadly lanceolate, slightly spreading; straight and erect when dry. Capsule exserted, oblong, furrowed above. Teeth erect, connected in eight pairs, without ciliary processes. Calyptra slightly hairy.

SYN. Orthotrichum anomalum. *Turn. Musc. Hib.* 94. *Hook. & Tayl. Musc. Br. ed. 2.* 126. *t.* 21.

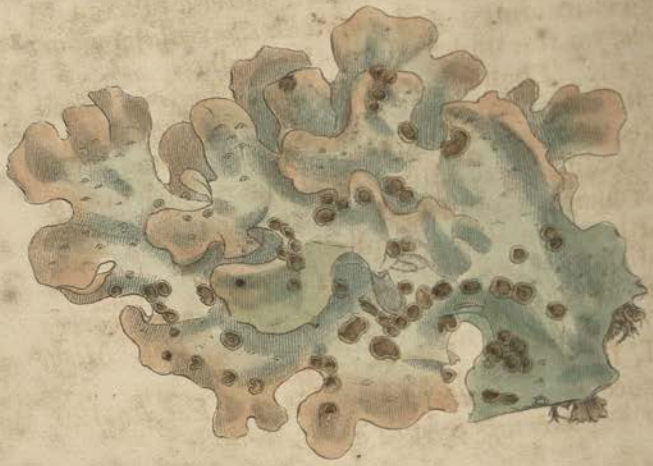
THIS moss grows on rocks and walls in limestone countries: it is common in Anglesea and upon the Ormeshead in North Wales.—The earliest account of it, as a species, appears in the above-cited work of Dawson Turner, Esq. It was formerly confounded with *O. cupulatum**, from which it is easily distinguished by its narrow and conspicuously elevated capsules.

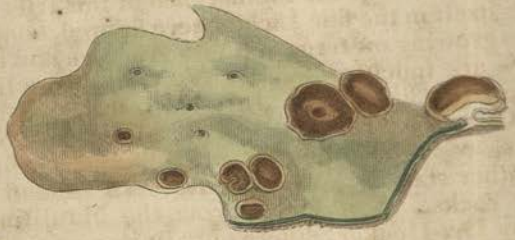
A handsome species growing in small round dense tufts. Stems above half an inch long; leaves of a dark purplish green with colourless points, their nerve vanishing above; teeth of the peristome white, erect when dry, converging when moist, never recurved.

* Figured as *O. anomalum* in *Engl. Bot. t.* 1423.

"Pulchrius vix ullum genus, difficiliora non multa*." Few mosses are more intricate or more elegant than those of this family. Several of the species possess very slight characters, and it is chiefly by a knowledge of their habit that they can be easily recognised. The obvious mark of this species may be observed in the exserted cylindrical furrowed capsule, whose peristome is destitute of cilia. The foliage of this and several other *Orthotricha* is remarkable for its sudden expansion in water, after having been dried. Immediately after immersion the leaves spring back from the stem, and after remaining widely spread out and recurved for a short period, they gradually recover their usual posture. Fruit ripe in June.—W. W.

* Mohr & Weber, *Fl. Cr. Germ.* p. 229.





Sticta macrophylla?

July 1st 1831.

STICTA macrophylla.

Broad-leaved Sticta.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Apothecia* twofold: *scutellæ* affixed by the centre only: and *cyphellæ, soredia,* or *bare spots,* on the underside of the thallus.

SPEC. CHAR. Thallus coriaceous, imbricated; naked, even, and green above; clothed with brown fibres beneath; its segments nearly flat, dilated, sinuated, obtuse, very entire. Scutellæ reddish brown; their margin obtuse, flexuose, mostly pale, at length depressed. Cyphellæ urceolate, empty, whitish.

SYN. Sticta macrophylla. *Fée Crypt. des Ecorces Off. t.* 33. *f.* 1. and *index.—Hook. Bot. Misc. P.* 1. 17. *t.* 13.

S. macrocarpa. *"Delis Monogr. ined." Fée, l.c.* 129. (*text.*) *Spreng. Syst. Veg. v.* 4. 303.

ANOTHER instance of the indifference of this tribe to climate presents itself in the fine Lichen here figured, known hitherto only as growing on trees in South America and the Mauritius. We are indebted to Mr. W. Wilson for this specimen, gathered by himself, in July 1829, by the Turk Cascade, near Killarney. He also observed the species, but without scutellæ, on Cromagloun Mountain, four or five miles from the other station just mentioned. In Ireland it grows on shady rocks. A specimen from the Mauritius, communicated by Dr. Hooker, differs only in its somewhat broader and thicker thallus, and in the arrangement of all the scutellæ at the edges of the lobes, as represented in the *Botanical Miscellany,* where that form is regarded as a variety; the plant with scattered shields being mentioned as the typical form of the species.

Thallus leathery, flexible when wet, more rigid and brittle when dry; its segments loosely imbricated, occasionally agglutinated, repeatedly divided, in a somewhat dichotomous manner, into broad, slightly concave, wavy lobes, with rounded sinuses, and bluntly angular extremities; the edges everywhere entire; surface even, or very slightly and irregularly pitted, without any elevated veins or powdery excrescences, green with a tinge of grey, brownish in the most exposed parts; in a dry state a little shining, ash-coloured, quickly resuming the green hue when moistened; underside densely clothed with short branched fibres, forming a

close sponge-like down, paler and yellowish towards the extremities, and approaching to black in the central parts of the thallus. Cyphellæ numerous, small, roundish, white or pale brown, and empty, but of a rather powdery appearance, within; their margin thin, entire or a little lacerated, more or less inflexed, projecting to the surface of the spongy fibres, and inclosing a proper interior membrane, which is not however always perceptible. Scutellæ some scattered, some clustered near the edges chiefly about the sinuses of the thallus. They first appear as brown immersed points, gradually rising and expanding with a concave, then flat, and at length convex, reddish brown or liver-coloured disk, pale internally, and a blunt, waved, often rugged or somewhat downy margin, formed from the thallus, sometimes paler than the disk, sometimes of the same or even a darker hue. The fully-formed scutellæ are about equal to hempseed in diameter, appressed to the thallus, but connected by their central part only; their underside more or less shaggy. In some of them a small central, prominent, concave pimple occurs, of a texture resembling that of the margin, as if the scutellæ were becoming compound. The plant has the fetid odour common to other species of *Sticta*.

The species figured at *tab.* 1103, 1104, 2110, 2298, 2359, and less decidedly those at 497, 572, belong to this group. It seems a natural genus, but its fructification affords no good technical character, unless the remarkable appearances on the underside of the thallus, presumed to be a sort of "*accessory apothecia*," be regarded as sufficient. These vary much in their nature. In a few species they are merely irregular bald spots, apparently proceeding from abrasion of that surface; in others they are powdery warts, *soredia*, without a margin; and again in others, as in the species now before us, little pits, *cyphellæ*, furnished with a margin from the superficial membrane of the thallus, within which they are originally formed: these cyphellæ also vary, being in some species filled with a powdery substance, in others empty, or merely lined with powder.—*Parmelia glomulifera*, although closely connected to the other *Parmeliæ* by *P. lætè-virens* and *P. tiliacea*, wants only one or other of these appearances to make it a *Sticta*. In the substance, colour, and divisions of its thallus it approaches *S. macrophylla;* and we have a specimen of a similar Lichen, gathered by Mr. Wiles in Jamaica, which bears at once the cyphellæ of the Sticta, and branched tufts like those of the *Parmelia*. *S. macrophylla* is very nearly allied to *S. damæcornis;* but the segments of the thallus of the latter, although they vary considerably in width, seem to be always more linear and more concave. It may be doubted to which of these two species *Hoffm. Pl. Lich. t. 24. f. 7*, taken from a specimen from the Isle of Bourbon, should rightly be referred. How far *S. laciniata* is really different we have not the means of ascertaining, for want of authentic specimens. Both the descriptions and Hoffmann's figure lead us to suppose it at least very nearly allied to our *S. macrophylla*.—*W.B.*

RUMEX aquaticus.

Grainless Water-dock.

HEXANDRIA Trigynia.

GEN. CHAR. *Cal.* of 3 leaves, combined at the base. *Cor.* of 3 petals. *Stigmas* multifid. *Nut* triquetrous, covered by the enlarged petals, which often bear tubercles.

SPEC. CHAR. Flowers perfect. Enlarged petals broadly cordate, reticulated, without tubercles. Leaves lanceolate, the lower ones cordato-oblong, crisped and waved. Whorls crowded, mostly leafless.

SYN Rumex aquaticus. *Linn. Sp. Pl.* 479. *Reichenb. Iconogr. Bot. t.* 369. *Svensh. Bot. t.* 209. *Hook. Br. Fl.* 168. (not of *Sm. Fl. Brit. Engl. Bot. t.* 2104, and *Hook. Scot.*, which is *R. Hydrolapathum*, Huds.)

IT is possible, from the similarity of this with *R. crispus*, that it may have been confounded with it, or mistaken for it, by collectors. Be that as it may, the species, which is the true *R. aquaticus* of Linnæus, was first distinguished from any described British one, by Mr. Goldie, who sent me specimens which he gathered near Ayr, in Scotland, flowering in July. Nor are we at present acquainted with any other station.

It is perennial, and a tall and strong growing plant. The lower leaves are about a foot in length, cordato-oblong, waved at the margin, rather obtuse, copiously veined and reticulated. The stem-leaves are gradually smaller upwards, less cordate, and oblong or linear-oblong, all on long petioles. The panicle is erect, rigid, much branched,

bearing leaves only at the base of the larger branches. Flowers very abundant, in whorls. The persistent enlarged petals, in which the main character exists, are very large, broadly cordate, entire, or only crisped at the margin, quite destitute of a tubercle, and beautifully veined and reticulated. Nut ovate-triquetrous, pale brown, tipped with a short point, the remains of the style.

The root leaf here figured is, necessarily, reduced.—*W.J.H.*

Lecidea incompta.

LECIDEA incompta.

Loose mealy-crusted Lecidea.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Patellulæ* sessile or more or less immersed, with a margin of a substance different from the thallus.

SPEC. CHAR. Crust indeterminate, coarsely mealy, uneven, olive green. Patellulæ superficial, small, purplish black; disk at length convex; margin narrow, flexuose.

WE find no description agreeing with this Lichen. It forms large patches on shaded parts of the rugged trunks of old elms at Shermanbury and Hurst Pierpoint, Sussex.

Thallus spreading widely and irregularly, composed of coarse particles appearing almost like minute crenate scales under a moderate magnifier, forming an uneven crust varying in thickness, and for the most part of loose texture, but occasionally more coherent and somewhat tartareous; its hue a dark olive green, which changes in long dried specimens to a dull ash-colour, and is then but imperfectly recoverable by moistening. Patellulæ numerous, of a dull black, with a tinge of purple most perceptible when they are wet, flattish when most regular, with a narrow, slightly raised, waved margin, but often confluent in little clusters, convex, rugged, and variously deformed; their internal substance of the same hue as the surface: they are often partially covered with particles from the thallus.

These patellulæ bear much resemblance to those of

L. æruginosa and *L. Lightfootii*; but the thallus is essentially different in structure, being formed from the first of coarse loose particles, not of granules scattered on a filmy substratum.—*W. B.*

Jungermannia cuneifolia.

July 1st 1831

JUNGERMANNIA cuneifolia.

Cuneate-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Common *receptacle* of the fruit none. *Perianth* or *calyx* monophyllous, tubular (rarely wanting). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Stem creeping, simple. Leaves rather remote, cuneiform, entire, or very obtusely notched at the point. Stipules minute, ovate, acute, bifid.

SYN. Jungermannia cuneifolia. *Hook. Brit. Jung.* 235. *t.* 64. *Hook. and Taylor Musc. Brit. ed.* 2.

PLANT so minute as to resemble the filaments of a *Conferva*, rather than the stems of a *Jungermannia*; growing loosely clustered. Roots consisting of a few small fibres, which proceed in tufts from the underside of the stem and always at the base of a stipule. Stems extremely slender, filiform, rarely exceeding half an inch in length, generally much smaller; and, as far as I have had the opportunity of observing, undivided, of a brownish color when dry, exceedingly fragile; cellules small and oblong. Leaves throughout the whole length of the plant rather distantly placed, scarcely the eighth of a line long, patent or erect, of an exactly cuneiform figure, the base decurrent; the apex entire, or cut into a wide but very shallow notch; the margin every where destitute of teeth or serratures. The cellules are roundish; the texture, when dry, brittle; the colour in all the specimens I have seen, a dull reddish olive or brown. Stipules one to each pair of leaves, rather closely appressed to the underside of the stem, small, of an ovate form, divided

for more than half its length, by an acute sinus, into 2 sharp segments. Its color and texture the same as the leaves.

Of the present curious little plant, which was found by Miss Hutchins growing parasitically upon *Jungermannia Tamarisci*, near Bantry in Ireland, no fructification has been detected: but this is the less to be regretted as the species is abundantly distinguished by its foliage and stipules, which are different from those of any other *Jungermannia*. It is not even easy to determine what are its natural congeners. In the narrowed base of the leaves, it has an affinity with *J. spinulosa;* in size, colour and texture, with *J. byssacea:* but the stipules require that it should be arranged in quite a different family, where there is none for which it can be mistaken.

I have nothing to add to the above description of this species, which was given in the *Monograph of the British Jungermanniæ:* for I have seen no other specimens than those of Miss Hutchins, nor am I aware that it has been found in any other station than that above given.—*W. J. H.*

July 1st 1831

SALIX Davalliana.

Davallian Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* & *Nect.* as in the male. *Cor.* none. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Upright. Leaves obovate-lanceolate, flattish, very acutely pointed, obscurely toothed or serrated, naked on both sides; somewhat glaucous beneath. Stipules minute. Young shoots and leaf-stalks pubescent. Calyx-scales obovate, silky. Germen stalked, acute, silky. Style as long as the divided stigmas.

SYN. Salix Davalliana. *Sm. Engl. Fl. v.* 4. 173. *Hook. Brit. Fl.* 428. *Salict. Woburn.* 93. *t.* 47.

A BUSHY shrub with ascending branches, scarcely exceeding four feet in height. Twigs downy whilst young, afterwards smooth, tinged with brown. Leaves ascending or patent, about an inch and a half long, of a firm texture, flat or very slightly keeled, tapering at the base, broadest above the middle, and thence again attenuated to a very sharp point, which is occasionally oblique and often bent backward; edges somewhat cartilaginous; upper surface dark green, shining; underside paler and more or less glaucous; veins scarcely sunk above, and very little prominent beneath. Leaf-stalk rather long and slender. Stipules mostly scarcely more than a gland. Female catkins about

an inch long, on short stalks, with a few small lanceolate floral-leaves. Calyx-scales usually rather acute in the lower, and rounded in the upper part of the catkin, flattish, fringed with long silky hairs from the back, upper half black. Nectary a pale yellow, truncate, interior gland. Germen and its stalk, which is about half as long as the calyx-scale, densely silky; its base slightly rounded, its apex tapering to a naked style, hardly longer than the short, narrow, spreading stigmas, which are usually divided in an early stage of the flowering to their base. The flowers appear when the leaves begin to expand, about the end of April.

Our female specimens were taken from a plant from Scotland, communicated by Mr. George Anderson as *S. tetrapla* of Walker, and referred to *S. phylicifolia* of Willdenow by Professor Mertens, who gave the same name to a Swiss specimen sent by Mr. Davall to Sir J. E. Smith, which Sir James also regarded as the same species, although "the germens, and indeed all parts of the catkins are much less silky." It is very probable that both Walker* and Willdenow included various things under their respective species; but we adopt with confidence the Smithian name, since Smith's British specimens were taken from the same individual plant as ours. We have specimens which seem the same from Teesdale. We are not acquainted with the male plant, but we have added the flowers of what Mr. Anderson regarded as such, from a sketch made from one of his specimens in 1811.

S. radicans (*S. phylicifolia* of *Engl. Bot. t.* 1958.) differs from the present supposed species by its procumbent lower branches, longer, more oblong, and less acuminate leaves, with a whiter underside, more conspicuous and often undulate serratures, and more considerable stipules. Its young shoots too are nearly or quite without pubescence, and its catkins longer, with scales longer in proportion to their width, and stigmas less generally divided. It flowers a full fortnight later than *S. Davalliana*.—W. B.

* We know of no description of *S. tetrapla* by Dr. Walker. It is merely mentioned in a posthumous volume of *Essays*, p. 408, as remarkable for having "the spiral upon the branch" completed by four leaves.

SALIX tetrapla.

Four-ranked Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* & *Nect.* as in the male. *Cor.* none. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Upright. Leaves lanceolate, twisted, somewhat carinate, very acutely pointed, serrated, nearly naked on both sides; glaucous beneath. Stipules small, half-heartshaped. Young shoots and leaf-stalks pubescent. Calyx-scales lanceolate, silky. Germen stalked, bluntish; naked in the lower part. Style longer than the divided stigmas.

SYN. Salix tetrapla. *Sm. Engl. Fl. v.* 4. 177. *Hook. Brit. Fl.* 429.

FROM cuttings gathered in Breadalbane in 1810, which have become upright shrubs, 12—15 feet high, with straight spreading twigs, slightly tinged with brown, and covered in the first season with close short pubescence. Leaves spreading, in general almost horizontally, rather thick and rigid, scarcely two inches long, except on luxuriant young shoots, tapering at each end, somewhat acuminate, with a very sharp point; edges slightly cartilaginous, scarcely recurved, serrated throughout, the serratures variable in size, often obscure, especially towards the base of the leaf, mostly shallow, tipped with a minute gland; both surfaces sprinkled with appressed hairs when young, ultimately naked, except

a close pubescence on the upper side of the leaf-stalk; dark green and not much shining above, very glaucous beneath; the veins slightly exarated on the upper, very little prominent on the under side. Leaf-stalks of moderate length, slender, with a dilated base. Stipules deciduous, small in general, pointed, glandulose on the edges and on the upper surface half-heartshaped when largest. Female catkins scarcely an inch long whilst in flower, on a short thick stalk. Floral leaves 3 or 4, small, lanceolate, recurved, with long silky hairs beneath on the nerve and edges, and furnished with minute narrow stipules which soon shrivel. Flowers rather closely set. Calyx-scales slightly concave, lanceolate or oblong, acute, especially in the lower flowers, dark brown or black, except at the base, silky on both sides, the long hairs of the back forming a fringe. Nectary single, interior, small, pale, almost square. Germen between erect and patent, on a densely hairy stalk about half as long as the calyx-scale when in flower, obsoletely quadrangular, rounded at the base, thence tapering to a bluntish point, towards which only it is silky with appressed hairs. Style naked, rather longer than the narrow, shortish, deeply divided, pale stigmas. Male flowers unknown to us*.

This is a much taller shrub than *S. Davalliana*, with leaves rather longer and more spreading, less shining and of a duller green above and whiter on the underside, and the flowers differ, as may be gathered from the descriptions. We have repeatedly disclaimed all dogmatical decision as to what are species among the Willows, nor have we ever denied the probability that many of those which in the present state of our knowledge we think it expedient to propose as distinct, may be, in reality, mere seminal varieties or hybrids. This being admitted, the further admission can scarcely be withheld, that those botanists may possibly be correct in their views who regard, in some instances, as species what we are accustomed to regard as sections of the genus. Of these facilè princeps is Koch, whose lucid *De Salicibus Europæis Commentatio* displays a most intimate acquaintance with his subject.—W. B.

* Since this plate and description have been prepared, we have been favoured by Mr. Forbes with recent specimens in leaf of *S. ramifusca*, *Salict. Woburn. t.* 53.; and we find it so similar to our *S. tetrapla* that we can scarcely doubt its being the male plant of the same species. We regret that we were not earlier acquainted with it, but we trust to have a future opportunity of further illustrating this and some other similarly circumstanced *Salices*.

2703.

253*.

August 1st 1837.

MYOSOTIS repens.

Creeping Water Scorpion-grass.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* salver-shaped, with 5 obtuse lobes; throat furnished with short valves. *Stam.* included. *Fruit* of 4 one-seeded lobes, fixed in the bottom of the calyx.

SPEC. CHAR. Fruit smooth. Calyx with straight appressed bristles, deeply 5-cleft; when in fruit mostly connivent, shorter than the divergent pedicel. Limb of corolla flat, longer than the tube; lobes somewhat emarginate. Pubescence of stem spreading.

SYN. Myosotis repens. *Don MSS.—Reichenb. in Sturm Deut. Fl.* with a figure. *Bluff & Fing. Comp. Fl. Germ. v.* 1. 230. *Hook. Brit. Fl.* 83. under M. palustris.

M. palustris β. *Hook. Fl. Scot.* 67. δ. *Mert & Koch Deut. Fl. v.* 2. 42.

WHEN the species of this genus shall receive from British botanists the attention which their beauty might be expected to command, it is probable that *M. repens*, first distinguished by the late Mr. G. Don, will be found to be not uncommon throughout the country, and be generally regarded as a distinct species, although we have long hesitated to separate it from *M. palustris*. Besides Mr. Don, Dr. Murray* has observed it in Scotland, Mr. Backhouse in Yorkshire, and Mr. D. Don again in Scotland and in Kent. It is not rare in some parts of Sussex, especially about boggy streamlets in open heathy parts of the forests, where it

* See his description of it as a species, probably new, common in the district of Alford, Aberdeenshire, in *Jameson's Edinburgh Journal* for December 1828, p. 147.

flowers from the end of May throughout the greater part of summer. It is given as a German plant, and we have it from Madeira.

It is usually a smaller plant than *M. palustris*, with a simple upright or ascending stem, scarcely a foot in height, often less; sometimes drawn out to a greater length when growing in a current. In comparatively dry places it is found procumbent. From its base are sent out several procumbent shoots, which take root, and by which the individual plant is continued, the original root lasting but one season. Leaves lingulate, the lower ones, which are at first crowded, but soon decay, often attenuated to an indistinct footstalk; the rest rather distant, sessile, their edges decurved, especially at the base, and slightly decurrent, whence the stem becomes obscurely angular. Racemes terminal, and axillary from a few of the upper leaves; at length long and spreading horizontally. Pedicels longer than in *M. palustris*, in their late recurved state mostly several times as long as the calyx, which is divided at least half way, and is generally, not invariably, closed or connivent over the dark brown shining seeds. A small leaf is often found at the base of the terminal raceme, and several of the lower flowers of the lateral racemes are usually subtended by such. The pubescence of the stem and its stolones is in general copious, and consists of long, spreading, white hairs; that of the rest of the plant, except, often, on the edges of the leaves, is appressed; on the calyx it is usually more abundant than in *M. palustris*. Corolla mostly smaller than in *M. palustris*; its lobes, as in that, flat and slightly emarginate, or, very often, in both, only apparently so from the downward flexure of the apex: its colour sometimes as bright a blue, but more generally, perhaps, paler, and less unfrequently pure white; and the fainter the blue of the expanded flowers, the less perceptible is a rose tint in the buds. Analogy forbids much confidence in the comparative length of the style; but in all that we have examined we find it in *M. palustris* as long as the tube of the corolla, and in this species and in *M. cæspitosa* only about half as long.

M. cæspitosa is distinguished from *M. repens* by the widely expanding calyx, the smaller and less flattened corolla with perfectly entire lobes, the want of stolones, and the appressed pubescence of the stem: but the last-mentioned character seems of less importance than it has been supposed in this genus, if the *M. laxiflora* and *M. strigulosa* of Reichenbach are mere varieties of *M. palustris*, as Mertens and Koch, and after them Lejeune and Courtois, have regarded them; an opinion which German specimens, for which we are indebted to Professor Mertens, appear amply to confirm.—W. B.

Fig. 1.

Fig. 2.

Collema limosum Fig. 1.

_____ ceranoides Fig. 2.

August 1st 1831.

2704. (Fig. 1.)

COLLEMA limosum.

Mud Collema.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Apothecia* scutelliform, (immersed, sessile, or somewhat stalked,) formed entirely from the thallus, and of a homogeneous substance without and within, subcartilaginous when dry, subgelatinous when wet; *margin* and *disk* of the same, or sometimes (when dry) of different colours.—*Acharius.*

SPEC. CHAR. Lobes of the thallus scattered, appressed, thick and pulpy, flattish, slightly crenulate; almost evanescent in drying. Scutellæ immersed; margin at length somewhat prominent, nearly entire.

SYN. Collema limosum. *Ach. Lich. Univ.* 629. *Syn.* 309.

Parmelia limosa. *Ach. Meth.* 232.

Lichen limosus. *Ach. Lich. Prod.* 126. excl. syn. Hoffm. *Ach. in Act. Stockh.* for 1801. 158. *t.* 3. *f.* 1.

PERHAPS common on wet clayey soil, although it has been but little noticed, and has hitherto remained unpublished as a British Lichen. Our specimens came from Hurstpierpoint, Sussex, and have been compared with an authentic one from Acharius. Indeed his excellent description in the Stockholm Transactions sufficiently ascertains the species.

Thallus composed of small gelatinous pulpy lobes, appressed to the soil, at first mere granules, at length irregu-

larly roundish, separate or confluent, flattish at the edges, which are irregularly sinuated or crenate, but with turgid granulations on the surface; their hue a dark obscure green, or almost black. Scutellæ formed within the substance of the lobes, mostly solitary, appearing at first a mere depressed dot, which gradually expands into a disk of the same hue as the thallus, or more or less tawny, at length occupying nearly the whole width of the lobe, which forms about it a thick, obtuse, orbicular margin, entire, or occasionally a little crenulate, sometimes level with the surrounding portion of the thallus, sometimes rather elevated above it, the disk itself being flat or slightly concave. In drying the thallus changes entirely its appearance, becoming a thin black or bluish crust which scarcely rises at all above the level of the soil, and in which the disks of the scutellæ form slightly concave, red, orbicular depressions. Moisture however, as usual in this tribe, restores the original appearance, even after the specimen has been kept dry many years.

The near affinity of this little Lichen to *Collema cristatum*, (*Lichen crispus* of *Engl. Bot. t.* 834.) is obvious, and it may possibly be but a variety; yet the scattered mode of growth, and the less tenacious substance of the thallus, which almost disappears in drying, seem to indicate a specific difference.

As in other instances among the Lichens, so in that of this, at first view, most "natural and distinct" genus, we are far from being satisfied as to the *generic character*. We have adopted one from Acharius, without being able heartily to subscribe to it. His microscopic investigations we have not verified. Bernhardi has justly observed*, that the gelatinous and bibulous nature of the thallus is but comparative, variable among the species of this genus, and partaken in various degrees by Lichens of other genera; and we could almost wish with that writer, that, with the exception of a few obvious genera, such as *Opegrapha*, *Gyrophora*, *Verrucaria*, *Calicium*, the Lichens were re-united as a single genus. —W. B.

* *Lichenum gelatinosorum Illustratio*, in Schrader's Journal for 1799, pt. 1. p. 2.

2704 (Fig. 2)

COLLEMA ceranoides.

Horned Collema.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Apothecia* scutelliform, (immersed, sessile, or somewhat stalked,) formed entirely of the thallus, and of a homogeneous substance without and within, subcartilaginous when dry, subgelatinous when wet; *margin* and *disk* of the same, or, sometimes (when dry) of different colours. —*Acharius.*

SPEC. CHAR. Lobes of the thallus imbricated, ascending, pulpy, dilated upwards, proliferous, terminated with crowded erect elongated granules overtopping the flattish scutellæ.

SYN. Collema palmatum *α. Ach. Lich. Univ.* 643? *Syn.* 319?

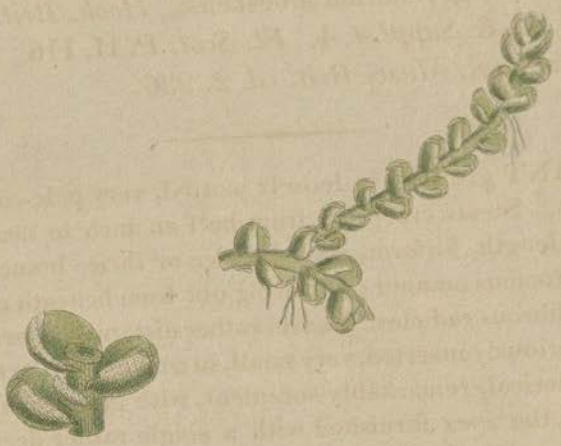
DRAWN from fine specimens found by Mr. R. J. F. Thomas at Boxgrove, near Chichester. The species is not uncommon on the chalky soil of the Sussex Downs, but does not generally produce its scutellæ. Mr. Forster has gathered it at Henham, Essex.

Thallus gelatinous, olive-brown, tinged but slightly in general with green, in young plants often blackish, growing in roundish pulvinate patches, sometimes half an inch thick; lobes proliferously branched, flabelliform, or dilated upwards from a narrow and sometimes almost cylindrical base, terminated by numerous turgid, graniform, or elongated and subcylindrical, erect, fastigiate, crowded laciniæ, proceeding chiefly from the edges, but some of them from the disk, of the lobes, which in most instances they entirely conceal, and forming the surface of the patch. Scutellæ sessile on

the disk of the lobes, seldom numerous, at first somewhat convex with a scarcely perceptible entire margin around their base of the substance of the thallus, which by degrees rises above the disk, becomes crenulate, and shoots out into granules like those of the thallus, and among these the disk, still but little convex, is immersed and often partially concealed. The disk of the scutella is browner than the thallus, tawny when dry; in which state the lobes of the thallus are brown, and the terminal granules black with a somewhat velvety appearance when observed with a glass.

C. ceranoides is nearly allied to *C. cristatum*, with the larger varieties of which it is, in all probability, often confounded; but it is distinguishable by the clustered fastigiate granules, or ramuli, which compose its surface. Acharius seems to have taken it for *Lichen palmatus* of Hudson; but, whatever Hudson's plant may have been*, that figured by Dillenius *t.* 19, *f.* 30, is proved by the specimen preserved in his herbarium to be the *L. palmatus* of *Engl. Bot. t.* 1635, with which the description in the *Historia Muscorum* likewise accords. To this the β of Acharius, *C. corniculatum* of Hoffmann, probably belongs. It is possible that the species before us may be the *Lichen tenax* of *Engl. Bot.* *t.* 2349, the original specimen of which has been sought for in vain in the Smithian collection. We have seen neither authentic specimens of the *L. tenax* of Swartz, nor Acharius's figure in the Stockholm Transactions; but the *L. tenax* of Bernhardi's paper in Schrader's Journal, which is regarded as the same with Swartz's, must necessarily, from the figure, be a different Lichen from ours.—W. B.

* See Mr. Griffith's opinion in Withering. We have no other ground for doubt.



Jungermannia albescens.

August 1st 1857.

JUNGERMANNIA albescens.

Pale-coloured alpine Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Common receptacle of the fruit, none. *Perianth* or *calyx* monophyllous, tubular (rarely wanting). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Stem creeping, branched. Leaves very concave, almost hemispherical, emarginate. Stipules ovato-lanceolate, obtuse, entire. Fruit terminal on short branches. Calyx oblongo-ovate, toothed at the mouth.

SYN. Jungermannia albescens. *Hook. Brit. Jung. t.* 82. & *Suppl. t.* 4. *Fl. Scot. P.* II. 116. *Hook. & Tayl. Musc. Brit. ed.* 2. 236.

PLANT growing in loosely matted, very pale-coloured patches. Stems creeping, from half an inch to nearly an inch in length, filiform, waved, twice or thrice branched in a dichotomous manner; throwing out from beneath minute tufts of fibrous radicles. Leaves rather distantly, alternately and bifariously inserted, very small, so convex as to be nearly hemispherical, remarkably succulent, with large prominent cellules, the apex furnished with a single rather deep and rounded notch, having its segments somewhat connivent. Their colour is a pale green, becoming still paler and almost white when dry. The stipules, one between each pair of leaves, are ovato-lanceolate, quite entire. The calyx is terminal upon short branches, oblongo-ovate, contracted and toothed at the mouth. Capsule ovate.

This is an inhabitant of some of the loftiest of our Scottish mountains, especially Ben Nevis, growing among the loose stones in situations where there is but little soil. Its fructification I have only gathered on the Alps of Switzerland, as upon the Grimsel and the Susten.—W. J. H.

Hypnum crafsinervium.

August 1st 1831.

HYPNUM crassinervium.

Thick-nerved Feather Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* lateral; *peristome* double; *outer,* of 16 teeth; *inner,* a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stem creeping, with simple or fasciculated erect branches. Leaves spreading, ovate, acuminated, concave, with reflexed serrated margins, nerved more than half way. Capsule narrow-ovate, fruitstalk rough, lid rostrate.

SYN. Hypnum crassinervium. *Dr. Taylor's MSS.*

THIS beautiful moss was omitted in the second edition of *Muscologia Britannica*, being then known only in a barren state. It grows on limestone rocks in moist shady places, and is abundant in the woods of Mucruss, and elsewhere near Killarney and Kenmare in Ireland; also near Beaumaris and in other places in North Wales. Fertile specimens were gathered at Mucruss by Mr. Wilson, on the 30th Oct. 1829, and he has since observed it in plenty and bearing fruit in several places.

Leaves very concave, so as to appear inflated at the back, with a stout and well-defined nerve, often forked or branched about midway.

This species resembles *H. blandum* and *H. rutabulum;* but is abundantly distinct from both in its very rostrate lid. The platter-edged leaves also furnish a ready mark of discrimination, when in a barren state, between this and all

allied species. Its supposed resemblance to *H. rutabulum* has given rise to the trivial name; the nerve of the leaf being considerably thicker and more obvious than in that moss: it differs also in the pale slender capsule; and the foliage, though more polished and brilliant, is of a much darker hue. Fruit ripe in November.—W.W.

ROSA Dicksoni.

Dicksonian Rose.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. *Petals* 5. *Seeds* [*carpels*] numerous, bristly, fixed to the inside of the calyx.

SPEC. CHAR. "Shoots setigerous." Prickles scattered, slender, subulate. Leaflets oval, hoary, coarsely and irregularly serrated, sparingly glandulose beneath. Fruit ovate-urceolate.

SYN. Rosa Dicksoni. *Lindl. in Trans. of Hort. Soc. v.* 7. 224. *Borr. in Hook. Brit. Fl.* 224.
R. Dicksoniana. *Lindl. Syn. Brit.* 99.

A NATIVE of Ireland, whence it was introduced to the garden of the eminent botanist after whom, at Mr. Sabine's instance, it has been named; Mr. James Drummond is recorded by Lindley as the discoverer. Ours are garden specimens.

It is a very distinct species, approaching in the appearance of the large, oval, downy leaflets to *R. pomifera*; and, as in that species, the upper part of the flower-stalk is incrassated and ripens with the fruit; but the serratures of the leaves are less regularly compound, and the glands on the underside are but few and inconspicuous, and the bush is of more humble growth, and similar in habit, in arms, and in the dark red and, in some states, cesious bark, to *R. cinnamomea*. The branches, however, are more divaricated, and the prickles less numerous on the root-shoots, and those on the branches less generally confined to pairs below the stipules.

Larger prickles with a small dilated base, slightly com-

pressed and sometimes a little curved. Leaflets 5 or 7; serratures large, irregularly gashed, or occasionally simple, edged with minute glands. Stipules large, pale, their underside and edges glandulose: upper ones broader, usually coalescing, where the flowers form bunches, into large concave pointed bracteæ; under the solitary flowers mostly retaining 1 or 3 leaflets. Flower-stalks setose. Calyx-segments glandulose on the back, slender and downy upwards with a long leafy point, simple, or with a linear-lanceolate pinna or two; sometimes, as in other species, the whole segment is broader, with leafy edges and several irregular wings, indicating some degree of monstrosity. Petals deep-pink, shorter than the calyx. Styles included, hairy, with depressed pale stigmas. Fruit usually with a few strong setæ, rather large, orange red, ovate with a lengthened neck, crowned with the persistent segments of the calyx.

The bush from which our specimens were taken exhibits no setæ, nor have we seen them on any other specimens. For their usual existence we depend on Mr. Lindley, who has had better opportunities of studying the species, and has assigned it a place among the *Cinnamomeæ*. Still it is possible that he has used the term *setæ* in its less strict sense, for setaceous prickles not tipped with a gland.—W. B.

VICIA Bobartii.

Small Crimson Vetch.

DIADELPHIA Decandria.

GEN. CHAR. *Style* bearded in front below the stigma. *Stam.* 9 united, 1 free.

SPEC. CHAR. Flowers solitary, nearly sessile. Leaflets linear; lower ones inversely heartshaped. Stipules with a pale depression beneath. Seeds orbicular, smooth.

SYN. Vicia Bobartii. *Forst. in Linn. Trans. v.* 16. 442.

V. angustifolia. *Sm. Engl. Fl. v.* 3. 282. *Sibth.* 224. (excluding the synonyms of Roth and Rivinus.)

V. lathyroides. *Dicks. Hort. Sicc. fasc.* 4. 12.

V. lathyroides β. *Huds.* 319.

V. sativa γ. *Sm. Fl. Brit.* 770.

V. sylvestris, flore ruberrimo, siliquâ longâ nigrâ. *D. Bobart. Raii Syn.* 321.

V. folio angustiore flore rubro. *Dill. Giss. App.* 47.

V. vulgaris, acutiore folio, semine parvo nigro. *Bauh. Pin.* 345.

GATHERED on Epping Forest, Essex. Bobart and Sibthorp found it in Oxfordshire, Dickson in Hyde Park, and Smith in Richmond Gardens: it is probably not uncommon on heaths and in pastures of a gravelly or chalky soil.

The *Vicia* now figured is the one which Sir J. E. Smith, after mature deliberation, separated from *V. sativa*, conceiving it to be the *V. angustifolia* of Roth and Willdenow,

which is t. 2614. of this Supplement, excluding all the synonyms.

The *V. Bobartii* is always a plant of more humble growth than *V. angustifolia*, differing from that species in the solitary flowers, which are of a brighter crimson colour, and in the upper leaflets being generally narrower, and the lower ones more truly inversely heart-shaped, like those of *V. lathyroides*, for which it has frequently been mistaken.

The description of this species in the *English Flora* is so excellent that it is not necessary to do more than point out the above ostensible differences.

The specific character and synonyms of *V. angustifolia*, t. 2614, may be thus altered.

SPEC. CHAR. Flowers in pairs nearly sessile. Leaflets lanceolate; upper ones linear. Stipules with a pale depression beneath. Seeds orbicular, smooth.

SYN. V. angustifolia *Roth Germ. v.* 1. 310. *v.* 2. 186. *Willd. Sp. Pl. v.* 3. 1105.

V. lathyroides. *Huds.* 318. (excluding the synonym of *Herm. Parad.* 242.)

V. sativa β. *Fl. Brit.* 770. *Engl. Fl. v.* 3. 281.

V. sativa β nigra. *Linn. Sp. Pl.* 1037.

V. sativa β angustifolia. *DeCand. Prod. v.* 2. 361.

V. sylvestris sive Cracca major. *Raii Syn.* 321. *Ger. em.* 1227. *f.* 4.

V. semine rotundo nigro. *Bauh. Pin.* 345.

E F.

Sept.r 1.st 1831

SALIX damascena.

Damson-leaved Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* and *Nect.* as in the male. *Cor.* none. *Stigmas* 2. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Erect. Young shoots densely hairy. Leaves ovate or rhomboidal, bluntly toothed; silky when young; at length nearly naked, green on both sides. Stipules half-heartshaped. Catkins (in flower) longer than the floral-leaves. Calyx-scales obovate. Germen stalked, naked. Style divided, longer than the diverging stigmas

SYN. Salix damascena. *Salict. Woburn.*

COMMUNICATED in 1813, by our often mentioned friend the late Mr. Anderson, with the manuscript name *damascenifolia*, as a new species from "the South of Scotland and the borders," which he had at that time cultivated for five years. The drawing was made partly from his specimens, and partly from living plants which were also received from him. From him, likewise, the plants described in *Salictum Woburnense* are supposed by Mr. Forbes to have been originally received by Mr. Mackay. Mr. Anderson possessed both sexes, but we have seen the female only.

A very upright shrub, about twelve feet high. Branches ascending; young shoots much tinged with reddish brown, hoary at first with copious short cottony hairs. Leaves ascending, firm and rather rigid, about an inch and a half long and an inch wide, slightly concave, often a little twisted, gently rounded at the base, ovate, or rather more

dilated about the middle of their length, mostly entire towards the point, which is acute but not acuminate, elsewhere beset with bluntish, often slightly wavy serratures: in their earliest stage they are more oblong and densely silky; in their adult state almost naked on both sides, except at the mid-rib, dark green and somewhat shining above, beneath bright yellowish green, in no degree glaucescent, but often, there also, rather shining; veins nearly rectangular, sunken a little above, prominent beneath. The small primordial leaves are somewhat obtuse. Leaf-stalks about one-fourth as long as the leaves, frequently reddish, covered with short dense pubescence. Stipules half-heartshaped, vaulted, toothed, glandulose on the edges, and on the disk near their insertion. Catkins small, less than an inch long when in flower, on hairy, patent stalks of about half the length, with three or four oblong, blunt, serrulate, recurved floral-leaves, slightly silky at the back, of which the uppermost is sometimes nearly as long as the catkin, but more often, like the rest, much shorter. Calyx-scales obovate, slightly concave, pale; towards the rounded apex dotted with red and at length turning black. Nectary interior, truncate, pale yellow, not half so long at the calyx-scale. Germen on a more or less hairy stalk, more than half as long as the calyx; itself naked, green, obsoletely quadrangular, a little bulging at the lower part, then tapering gradually to the thickish paler style, which is cloven at the point, so as to furnish diverging stalks to the small whitish or very pale pink stigmas. The flowers appear, with the young leaves, about the middle of April.

Perhaps too nearly allied to *S. Andersoniana* to be properly regarded as a species. In that plant the leaves, especially the lower ones, are more oblong, and their underside is not so absolutely devoid of a glaucous tinge; the catkins are shorter and rarely overtop the larger and generally leaf-like bracteas; the flowers, except that they are more loosely set and their calyx-scales more oblong and blacker, are very nearly the same in structure. If the germen-stalk is sometimes naked (which we have not seen), it is usually hairy. Koch would, no doubt, refer *S. damascena*, as he does its affinities *S. Andersoniana*, *S. nigricans*, &c., to Wahlenberg's *S. phylicifolia;* but those botanists would scarcely have appropriated the name to Willows of this set, had they been aware of the fact that the original Lapland specimen of *S. phylicifolia*, in the Linnæan Herbarium, is indubitably, as was long since stated by Smith, the *S. phylicifolia* of *Engl. Bot.* t. 1958. This last is united by Koch, with numerous affinities, to *S. Arbuscula* of Wahlenberg, which he regards as the *S. Arbuscula*, of the Linnæan *Flora Suecica*.—W. B.

Gymnostomum Wilsoni.

Sept. 7th 1831

GYMNOSTOMUM Wilsoni.

Wilson's Beardless Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Mouth* of the *capsule* destitute of fringe, but often bordered with an horizontal membrane. *Calyptra* dimidiate.

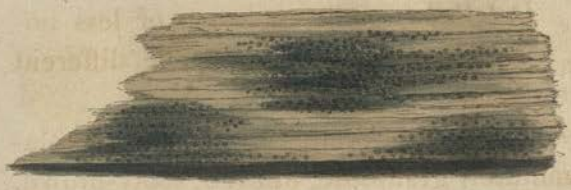
SPEC. CHAR. Leaves obovate-oblong, obtuse, much spreading, entire with recurved margins, the nerve ending in a long point. Capsule elliptical, contracted at the mouth. Lid obliquely rostrate. Calyptra rough.

SYN. Gymnostomum Wilsoni. *Hook. Bot. Miscel. v.* 1. 143. *t.* 41.

THIS Moss was distinguished from *Gymnost. truncatulum* in January 1828, by Mr. W. Wilson, who found it on a bank by the road side leading from Over to Delamere Forest in Cheshire, and subsequently in several situations in Anglesey, and between Bangor and Carnarvon. Mr. Thomas Drummond has also observed it near Forfar in Scotland.

Stems about one-fourth of an inch long, in round tufts. Leaves rounded and almost piliferous at the extremity; the upper ones in general widely spreading in a rosaceous manner; of a light pleasant green, their texture opaque and compact, except in the lower part, where they are obviously reticulated. Capsule red and shining, narrow-elliptical, moderately contracted at the mouth. Calyptra minutely rough with papillæ in the upper part.

It may be known from all the varieties of *Gymnostomum truncatulum* by its elliptical bright red capsules, and by the opaque light green foliage, spreading out in the manner of *Tortula ruralis*, which it otherwise much resembles. Fruit ripe in February.—W. W.



Lecidea synothea.

2711.

LECIDEA synothea.

Minute crowded Lecidea.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Patellulæ* sessile or more or less immersed, with a margin of a substance different from the thallus.

SPEC. CHAR. Crust indeterminate, somewhat gelatinous, minutely granulose, uneven, sooty-brown. Patellulæ minute, dull brownish-black, pale within, at length convex; margin narrow, evanescent.

SYN. Lecidea synothea. *Ach. Lich. Univ.* 169. *Syn.* 26.

OBSERVED at Esher, Surrey, and at Henfield and Boxgrove, Sussex, on the decaying surface of squared rails of oak and deal. It agrees with authentic specimens from Acharius.

Thallus composed of extremely minute granulations, which form a very thin, indeterminate, rugged, unpolished, obscure dark brown or sooty-black crust, becoming subgelatinous upon the application of moisture, which it imbibes rapidly, changing its general hue but little, although some parts assume a dull tinge of green. Occasionally the crust is interrupted, and an obscure pale film is here and there perceptible, of which it is difficult to decide whether it belongs to the plant or not. Patellulæ numerous, usually clustered, so small as to be barely distinguishable by the naked eye from the crust, amongst the granulations of which they arise, and from which they differ but little in hue; they

are at first flat, or nearly so, and regularly orbicular, with a narrow margin, scarcely rising above the disk, occasionally discoverable; but they soon become very convex, often nearly hemispherical, losing all appearance of a margin, and are not unfrequently irregular in shape and confluent: their internal substance is greyish.

It requires a practised eye to distinguish this species from other obscure Lichens which usually grow on rails; but its structure is found, upon examination, to be peculiar. It has a near affinity to *Lecidea uliginosa*, *Engl. Bot. t.* 1466. —W. B.

Oct.1 1831.

VIOLA arvensis.

Corn Pansy.

PENTANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-leaved, lengthened out at the base. *Pet.* 5, irregular, the lowermost spurred behind. *Anthers* slightly cohering. *Caps.* superior, of one cell with three valves.

SPEC. CHAR. Stem angular, diffuse. Leaves deeply crenate, fringed; the lower ones nearly heart-shaped; the upper ones oblong. Stipulas pinnatifid. Petals shorter than the calyx. Germen nearly globular.

SYN. Viola arvensis. *Murr. Prod.* 72. *Roth Fl. Germ. v.* 1. 106. *v.* 2. 273. *Sibth.* 84. *Sym. Syn.* 81.
V. tricolor (α). *Linn. Sp. Pl.* 1326. *Huds. Fl. Angl.* 380. *Willd. Sp. Pl. v.* 1. 1168.
V. tricolor β. *Sm. Fl. Brit.* 248. *Engl. Fl. v.* 1. 305.
V. bicolor arvensis. *Raii Syn.* 366.
Corn Pansie. *Pet. H. Brit. t.* 37. *f.* 9.

THIS Pansy is common in cornfields, flowering from May to September. Root fibrous. Stems ascending, branched at the base, angular, furrowed, roughish. Leaves pale green, alternate, stalked, deeply crenate, slightly hairy, fringed, the lower ones nearly heartshaped, the upper ones oblong. Stipulas deeply pinnatifid, fringed, the terminal segment frequently crenate and assuming the character of the leaves. Flower-stalks axillary, solitary, longer than the leaves, with a pair of small bracteas. Calyx-leaves lanceolate, acute, rough, fringed. Corolla small, concave,

especially when first opened. Petals varying in size, shorter than the calyx, whitish, the lower one marked with five black streaks, sometimes yellow, usually so only towards the centre of the corolla. Germens obtuse, nearly globular.

The essential differences of this species from the Heart's-ease or Garden Pansy, *V. tricolor* of Smith and Curtis, are: Petals shorter than the calyx; germen obtuse, nearly globular. It may also be readily distinguished by the pale green colour of the plant, the more erect stem, the leaves more frequently heartshaped, the rough calyx-leaves, and the small yellowish-white concave flowers, the lower petal marked with only five black streaks.

Notwithstanding Linnæus, in uniting the Heart's-ease with the Corn Pansy, considered the former as the variety, it will doubtless be thought right to continue the names of *tricolor* and *arvensis* as usually applied.

The figure in Johnson's edition of Gerarde's *Herbal*, *p.* 864, *n.* 4, which is altered from that in the original edition, is an indifferent representation of *V. arvensis*, though the description of *n.* 3. evidently belongs to it.

The specific character of *V. tricolor*, t. 1287, may be thus altered:

Stem angular, diffuse. Leaves deeply crenate, oblong. Stipulas pinnatifid. Petals longer than the calyx. Germen oval.

E. F.

COTONEASTER vulgaris.

Common Cotoneaster.

ICOSANDRIA Pentagynia.

GEN. CHAR. *Flowers* polygamous. *Calyx* turbinate, with 5 short teeth. *Petals* 5, small, erect. *Stamens* erect, the length of the teeth of the calyx. *Fruit* turbinate, with its nuts adhering to the side of the calyx, but not cohering in the centre.—*Lindley.*

SPEC. CHAR. Leaves oval, entire, downy beneath, mucronate. Calyx (or germen of some authors) smooth. Styles three or four.

SYN. Cotoneaster vulgaris. *Hook. in Fl. Lond. N. S. t.* 211. *Br. Fl.* 221. *Lindl. Syn.* 104.

Mespilus Cotoneaster. *Linn. Sp. Pl.* 686. *Sm. Engl. Fl.* 4. 268.

THE discovery of this plant, as a native of Britain, has been attributed, until lately, to Mr. W. Wilson, who observed it, without fructification, upon the cliffs of Llandudno, Ormeshead, in North Wales, about the year 1821, and communicated specimens, in fruit, gathered in 1825, to the author of the *English Flora:* but a claim has at length been set up in behalf of J. W. Griffith, Esq. of Garn, who is said to possess a specimen gathered, by himself, so early as 1783; but "*unfortunately he laid it by, instead of describing and communicating it to Sir J. E. Smith.**" The publication of *English Botany* commenced in 1790; and it is probable that in the interval between that time and the original detection

* *Faunula Grustensis*, by John Williams; printed at Llanrwst, 1830.

of *Cotoneaster vulgaris*, the circumstance had been forgotten: it is not easy to account in any other way for this very singular instance of delitescence.

A small bush, without thorns; the young shoots downy. Leaves deciduous, on short downy footstalks, broadly elliptical, obtuse or acute; covered beneath with a dense cottony pubescence. Stipules in pairs, tapering, dark red and covered with down. Flower-stalks also downy, from the same buds as the leaves, and either solitary or in branches with three or four flowers, but always shorter than the leaves. Bracteas minute, red, lanceolate. Flowers drooping, pale red. Segments of the calyx ovate, blunt, erect, with a woolly fringe. Petals orbicular, a little jagged or toothed in the margin, generally converging and overlapping each other. Filaments 16—20, awl-shaped and compressed, bent inwards so as to cause the anthers to lie in a cluster over the stigmas. Styles filiform, arising from near the middle of the inner or angular part of the germens. Tube of the calyx (usually considered as *superior*, but according to Professor Lindley's view, *inferior*,) turbinate, externally glabrous. Fruit red, roundish, crowned with the segments of the calyx, which are exactly closed over the seeds, forming part of their fleshy covering. Seeds or nuts bony, not cohering together, nor splitting into valves.

Each germen contains the rudiments of two embryos, only one of which comes to maturity. Embryo erect, with oval cotyledons.

This plant occurs in various parts of the Ormeshead, but is most plentiful on three ranges of rocks just above the village of Llandudno.—Flowers in May, fruit ripe in July.

W. W.

RUBUS plicatus.

Plaited-leaved Bramble.

ICOSANDRIA Polygynia.

GEN. CHAR. *Calyx* 5-cleft. *Petals* 5. *Berry* superior, of several single-seeded *grains*, placed upon a spongy receptacle.

SPEC. CHAR. Stem not rooting, nearly erect, obsoletely angular, smooth, with small, somewhat curved, uniform prickles. Leaves digitate, of 5 stalked, cordate-ovate, pointed, plicate leaflets, paler green beneath. Panicle prickly, nearly simple, corymbose. Calyx slightly reflexed.

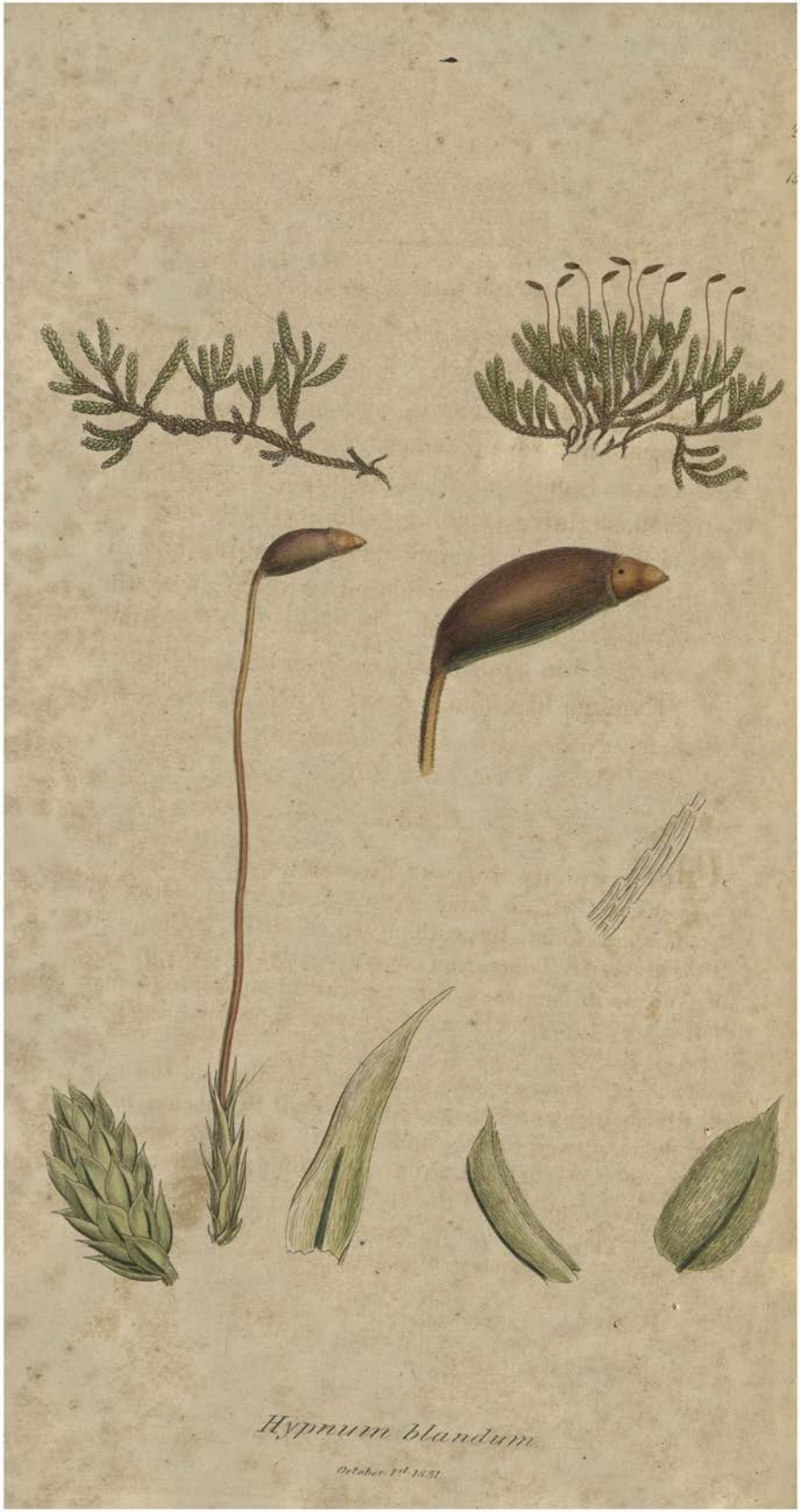
SYN. Rubus plicatus. *Weihe and Nees Rubi Germ.* 1. *t.* 1.
R. nitidus. *Sm. Engl. Fl. v.* 2. 404.
R. suberectus β. *Borr. in Hook. Brit. Fl.* 244.

THE plant before us is not rare in the forest districts of Sussex, in heathy and somewhat boggy places, chiefly on the banks of streams. Sir J. E. Smith was misled to give it as *R. nitidus* of Weihe and Nees, by the writer of the present article, who, when the first edition of Hooker's *British Flora* was published, regarded it *R. plicatus* of the German authors, but as a mere variety of *R. suberectus*. This last opinion also he has been led to abandon by the remarks of our friend Mr. W. Wilson, who has carefully availed himself of his opportunities of studying *R. suberectus* in its wild state. He confirms the statement of Anderson and Smith, that the leaves on the young stems of that plant are often pinnate, and that the truly ripe fruit is not black but deep red, "the colour of a ripe Morello cherry." In *R. plicatus* the fruit whilst ripening is, as in *R. suberectus*, of a beautifully bright red; but it is perfectly black when ripe, and the leaves are never pinnate: the stalks also of the lower pair of leaflets, although short, are more perceptible than in *R. suberectus*; and these differences, in addition to the essential one of curved, not setaceous, and larger and more numerous, although still small and sparingly scattered, prickles, seem to warrant the separation. In *R. suberectus*

the panicle is usually unarmed, in *R. plicatus* rather copiously prickly.

The stem of *R. plicatus* is biennial, erect, curved at the summit only, and scarcely exceeds 3 or 4 feet in height, except in closely shaded places, where it is sometimes longer and more inclined, but seems never to take root: it is without furrows, green, with a red tinge towards the sun, hairless, or with only a few scattered hairs the first season; in the second summer usually bright red and shining. The prickles have a somewhat dilated base: those of the leaf-stalks are rather more hooked, as well as those on the panicle, except the small innocuous ones on the ultimate flower-stalks. Some of the lower stem-leaves are ternate; the rest quinate: the lower ones of the flowering branches usually ternate; the upper simple. The leaflets are thin and flexible, sharply and mostly simply serrated, often deflexed from the curvature of their stalks: the upper surface naked, or sprinkled with a few hairs, bright green, seldom shining; the underside more hairy and paler, not hoary. The flowering branches are numerous, frequently several from the same point, hairy, but green, each terminated by a simple raceme or by a panicle of which the lower branches only are subdivided, and the uppermost flower-stalk shorter than those immediately next to it. The calyx segments are spreading, or slightly reflexed, broad and short, with an acute point, downy, usually without, sometimes with a few minute prickles; the petals roundish, or longer and obovate, white; rarely tinged very faintly with pink. The berry is rather small, nearly globular, finally of a full shining black; its flavour acid until quite ripe, then sweetish.

The specimens from Dr. Williams, described in *English Flora* as *R. plicatus*, bear a close resemblance to *R. rhamnifolius*, and probably belong to it. The *R. nitidus* of Weihe and Nees, as well as their *R. affinis* and *R. fastigiatus*, have, according to the descriptions and figures, stems 5—15 feet long, arched and rooting, and leaves with considerable stalks to all the leaflets; and all of them seem to have larger prickles than this which we now take for their *R. plicatus*. Authentic specimens of *R. plicatus*, *R. nitidus*, and *R. affinis*, kindly communicated by Professor Mertens of Bremen, present no distinguishing characters in the flowering shoots. A bramble which occurs in Sussex and in Surrey is probably one or the other of the two last; but whether these are specifically distinct from each other, and whether the British plant in question is more than a rooting variety of *R. plicatus*, remains as yet in doubt. Our authentic specimens of *R. fastigiatus* differ considerably from each other. One of them might be taken for *R. suberectus*; but the leaves and prickles of the barren stem, as well as the length and mode of growth ascribed to it, disagree.—W. B.



Hypnum blandum

October 1st 1831

HYPNUM blandum.

Bland Feather Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* lateral. *Peristome* double; outer one of 16 teeth; inner, a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems somewhat pinnated. Leaves imbricated, slightly spreading, elliptical, very concave above, with continuous margins, abruptly acuminated, minutely serrulated, without striæ, the nerve discontinued below the summit. Fruitstalk rough. Lid conical, obtuse with an apiculus.

SYN. Hypnum blandum. *Lyell MSS. Hook in Fl. Lond. N. S. Arn. Disp. Musc.* 60. *Hook. and Tayl. Musc. Brit. ed. 2.* 176.

THIS very pretty Moss was discovered by C. Lyell, Esq. on a bank in Cadnam Lane, New Forest, Hampshire. It has since been found, but without fructification, in Cornwall by the Rev. Mr. Tozer, and more recently, in 1830, by Mr. W. Wilson in Anglesey, bearing fruit in moderate plenty, on rocky pasture-ground and in grassy spots near the sea, between Aberffraw and Holyhead.

Stems procumbent; the branches bending downwards, usually about one inch, never more than two inches long, slightly thickened above, and densely crowded together. Leaves of a bright pleasant green, shining, very concave, almost to the apex, like the bowl of a spoon, not reflexed in the margin, their texture exceedingly thin and membranous, with a narrow nerve of nearly equal thickness through-

out, and sometimes slightly projecting at its summit from the back of the leaf, like the arista of grasses. Capsule ovate-oblong, slightly cernuous, smooth and shining, of an olive-brown colour. Lid variable, for the most part conical, obtuse with a small point; sometimes conico-acuminate. Leaves of the perichætium lanceolate, erect and appressed, with a short nerve.

Approaching in character very near to *H. rutabulum* (*H. brevirostre*, *Engl. Bot. t.* 1647.), but truly distinct, and in general appearance more like *H. purum* and *H. murale*. It is remarkable for its compact manner of growth, and for the beautiful imbrication of its glossy inflated leaves, which acquire a brownish hue in the summer season. Fruit ripe in November and December?

W. W.

Fig. 1.

Fig. 2.

Collema crispum Fig. 1.

_____ dermatinum Fig. 2.

October 1st 1831.

2716. (Fig. 1.)

COLLEMA crispum.

Curled Collema.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Apothecia* scutelliform, (immersed, sessile, or somewhat stalked,) formed entirely of the thallus, and of a homogeneous substance without and within, subcartilaginous when dry, subgelatinous when wet; *margin* and *disk* of the same, or sometimes (when dry) of different, colours.—*Acharius.*

SPEC. CHAR. Lobes of the thallus thinnish, much divided; their segments imbricated, crowded, rounded, concave, with entire or denticulate raised edges. Scutellæ sessile; margin crenulate, at length leafy.

SYN. Lichen crispus. *Huds.* 535. *Linn. Syst. Nat. ed.* 12. 710. *Wulf. in Jacq. Coll. v.* 3. 129. *t.* 10. *f.* 1. *With. ed.* 3. *v.* 4. 76.

Lichenoides gelatinosum atro-virens, crispum et rugosum. *Dill.* 139. *t.* 19. *f.* 23.

OF no unfrequent occurrence upon stones and the lower part of walls, chiefly in shady places, and found sometimes on the ground, both on chalky and on gravelly soil.

Thallus in rather thin patches of a roundish outline when separate, but often confluent to a considerable extent. Lobes crowded and somewhat imbricate, variable in size, though always small, roundish, or more or less lengthened and variously sinuated, fixed beneath by small tufts of white cotton-like fibres, the ultimate segments entire, or minutely crenulate, or fringed with granule-like teeth*, their edges raised, their surface either naked or sprinkled with minute granules, which probably grow out into the small round processes that are usually crowded proliferously over all the central parts of the patch, so as to give it an uneven, curled, and leafy appearance. The substance is gelatinous and pellucid, but tenacious, when wet; rigid when dry; thin, yet not membranous like that of *C. nigrescens*, *C. sinuatum*, &c.: the colour a dark bottle-green, drying greyish black, with a tinge of green or blue in specimens which have grown in very damp situations. Scutellæ of moderate

* "Foliorum laciniæ exteriores verno tempore obtusæ sunt, vix crenatæ, æstate vero crenatæ fiunt."—*Dillenius.*

shrinking much and rather darker when dry, varying much in quantity, and often wanting in some parts and clustered in others, but not particularly, in our specimens, towards the edges of the lobes. Scutellæ numerous on the two specimens on which we have seen them, affixed by the centre only, and almost stalked, about the size of cabbage-seed; their disk red, at least when the plant has been dried; their margin entire, or very minutely crenulate, inflexed in an early stage, afterward narrow and almost level with the flat or somewhat convex disk.

The substance of the thallus of this species is about as thick as that of *C. crispum*, whilst its lobes are larger and less divided, and its scutellæ considerably resemble those of *C. granulatum*, *t.* 1757, and *C. flaccidum*, *t.* 1653: but the thallus is much less thin and membranous than in the latter, the lobes less entire, and the granules not so numerous nor so minute: the lobes are less concave than in *C. granulatum*, and the granules are confined to the upper surface, and the tufted cottony radicles are wanting. Judging from the specimen sent by Acharius to the Linnean Society, *C. thysanœum* of that author is scarcely more than a variety of *C. dermatinum*. Whether *C. prasinum* of Hoffmann, and *Lichen pulcher* of Leers, cited with doubt by Acharius, are the same or not, we have no means of knowing.

Dillenius records his *Lichenoides, no.* 22, as found first on rocks near Wetzlar, and subsequently at Marston near Oxford. It can scarcely be doubted that his figure and description belong to the *Collema* before us; and it may be conjectured that they were made from the German plant, and that the specimens preserved in his herbarium, which are *C. granulatum*, were gathered at Marston, and erroneously regarded as the same species. Wulfen (in *Jacq. Coll. v. 3.* 132.) refers to this figure of Dillenius as a representation of his own *Lichen submarginalis*; but the situation that he ascribes to his Lichen, on clayey soil among *Riccia glauca*, *Phascum piliferum*, &c., and his remark that, in drying, "imbibitum velut a terrâ disparet," can scarcely apply to the present species, and rather countenance the opinion of Bernhardi, that the plant was probably a *Tremella*. *Lichen rupestris* of Withering was intended for the Marston plant; and the account of it is a compilation from Jacquin and Dillenius.—W. B.

J.K.G. del.

November 1st 1831

2717.

ASTRAGALUS alpinus.

Procumbent Milk Vetch.

DIADELPHIA Decandria.

GEN. CHAR. *Calyx* 5-toothed. *Corolla,* keel blunt. *Stamens* diadelphous. *Legume* bilocular, or half-bilocular, the lower suture being inflected.—*De C.*

SPEC. CHAR. Stems procumbent. Branches and both sides of the numerous ovato-elliptic leaflets adpressedly pubescent. Stipules ovate, sub-acute, unconnected with the petioles, sub-coalescing at the base opposite to the leaves. Flowers spicato-capitate, nodding. Peduncle in fruit longer than the leaves. Legumes stipitate, pendulous, prismatic, attenuated at both extremities, covered with black hairs, about two-seeded.

SYN. Astragalus alpinus. *Linn. Fl. Suec. ed.* 2. 661. *Sp. Pl. ed.* 2. 1070. *Syst. Veget.* 568. *Jacq. Collect. v.* 1. 323. *Villars, Pl. Dauph. v.* 3. 464. *Lam. Dict. Bot. v.* 1. 315. *Roth, Fl. Germ. v.* 1. 312. *v.* 2. *Pt.* II. 194. *Host. Synops. Fl. Aust.* 409. *Pallas, Astrag.* 41. *t.* 32. *Willd. Sp. Pl. v.* 3. 1297. *Suter, Fl. Helvet. v.* 2. 103. *Wahl. Fl. Lapp. n.* 350. *Fl. Helvet.* 131. *Fl. Suec.* 464. *Pursh, Fl. Am. Sept. v.* 2. 472. *Nutt. Gen. v.* 2. 99. *Brown, App. to Parry's* 1*st Voyage,* 20. *Hooker, App. to Parry's* 2*nd Voyage,* 395.

A. alpinus, foliis viciæ, ramosus et procumbens, flore glomerato oblongo albo cœruleo. *Scheuchz. Itin. Alp. v.* 3. 509. *f.* 7. *Œd. Fl. Dan. v.* 1. 10. *n.* 51.

A. alpinus minimus. *Linn. Fl. Lapp.* 267. *t.* 9. *f.* 1. *Linnean Herbarium.*

A. pedunculis folio longioribus, foliis laxe spicatis

about one half of the length of the tube, and by the bracteæ being as long as the pedicels, and pointed; likewise, I would add, by the flowers being more crowded and considerably larger, the calyx, peduncle, and legume more hairy, and the pedicel of the legume rarely exceeding the tube of the calyx, while, in the other, it equals, or even projects beyond, the teeth. Still, however, it can only be regarded as a variety, passing gradually into the British and Swiss plant through the Lapland and Rocky Mountain forms. It appears, then, either that DeCandolle had inadvertently referred to *Astragalus alpinus* as a synonyme for his *Phaca astragalina*, or else, if they are the same,—which seems from the diffusion of the plant, not otherwise mentioned by him, to be almost certain,—that he had, upon too slight an examination, followed Allioni in removing it from the genus *Astragalus*.

Perhaps other difficulties regarding this species have arisen from accidental errors in the references of DeCandolle. He refers to *Linn. Sp. Pl.* 1070, both under *Phaca astragalina* and *Oxytropis montana*, while he at the same time points out the distinctions between these plants: and he refers under *Phaca astragalina*, to *Astragalus montanus* of Jacquin, *Enumeratio Stirpium Vind.* 264, and of his *Flora Austriaca*, *p.* 131 (rather, *vol.* 2. *p.* 42. *t.* 167). But Jacquin considers the *Astragalus montanus* of both his works to be the same as the plant so called by Linnæus, and this Linnæus declares to be different from *Astragalus alpinus*. No one who can estimate the labour or admire the talent which enabled this great botanist to carry forward his science with such giant strides, will think harshly for one instant of such oversights.—Robert Graham.

Edinburgh, Sept. 1831.

2718
517*

November 1st 1831.

LUZULA congesta.

Many-headed Bog Wood-rush.

HEXANDRIA Monogynia.

GEN. CHAR. *Perianth* inferior, of 6 leaves, glumaceous. *Caps.* 1-celled, 3-valved; *valves* without dissepiments. *Seeds* 3 at the bottom of the cell.

SPEC. CHAR. Panicle of numerous, roundish-ovate, dense, partly stalked, clusters. Capsule obovate, obtuse, with a small point, as long as the calyx. Seeds stalked, without a crest. Leaves flat, rough-edged.—*Sm.*

SYN. Luzula congesta. "*Lej. Spa.* 168." *DeCand. Fl. Fr. ed.* 3. *v.* 5. 305. *Forst. Tonbr.* 44.

L. campestris β. *Bicheno Tr. of Linn. Soc. v.* 12. 334. *Hook. Scot.* 1. 110. *Brit. Fl. ed.* 2. 166. *DeCand. & Dubis, Bot. Gall. v.* 1. 479.

Luciola congesta. *Sm. Engl. Fl. v.* 2. *p.* 181.

Juncus campestris γ. *Linn. Sp. Pl.* 469. *Willd. Sp. Pl. v.* 2. 221.

J. campestris β. *Sm. Fl. Brit. p.* 386.

J. liniger. *Purt. Midl. Fl. Suppl.* 352. *t.* 9.

Gramen hirsutum elatius, panicula juncea compacta. *Raii Syn. p.* 416.

THIS plant "has very erect stems, 18 inches high. The leaves are much narrower than in *L. campestris*, with a minute callous roughness all along their edges, which is scarcely discernible in that plant. The quantity

of white hairs varies in both. The panicle of the present is certainly very different, consisting usually of 7 or 8 roundish or ovate, dense obtuse clusters or spikes, the first almost sessile, the rest on long, partly spreading stalks. Calyx rather paler, more taper-pointed, scarcely extending beyond the capsule, which is of a rather narrow obovate form."—*Sm. in Engl. Fl.*

We have ourselves expressed an opinion in the *Flora Scotica*, and in the *British Flora*, that this ought only to be considered as a var. of *L. campestris*. Mr. Purton was the first to distinguish it as a species in this country; and upon the continent, Lejeune, and, following him, Decandolle in the Supplement to the *Flore Françoise*, did the same: but the latter author, in the *Botanicon Gallicum*, has again referred it to *L. campestris*.

In moory and turfy soil *L. congesta* is not uncommon. It is perennial, and flowers in the month of June, a month later, according to Mr. Purton, than *L. campestris* does in similar situations.—W. J. H.

2719

321*

ERYTHRÆA latifolia.

Broad-leaved Tufted Centaury.

PENTANDRIA Monogynia.

GEN. CHAR. *Capsule* of 2 incomplete cells, many-seeded. *Corolla* salver-shaped. *Anthers* finally spiral.

SPEC. CHAR. Stem 3-cleft at the top. Flowers in dense forked tufts. Calyx as long as the tube. Segments of the corolla lanceolate. Lower leaves broadly elliptical, with 5 or 7 ribs.—*Sm.*

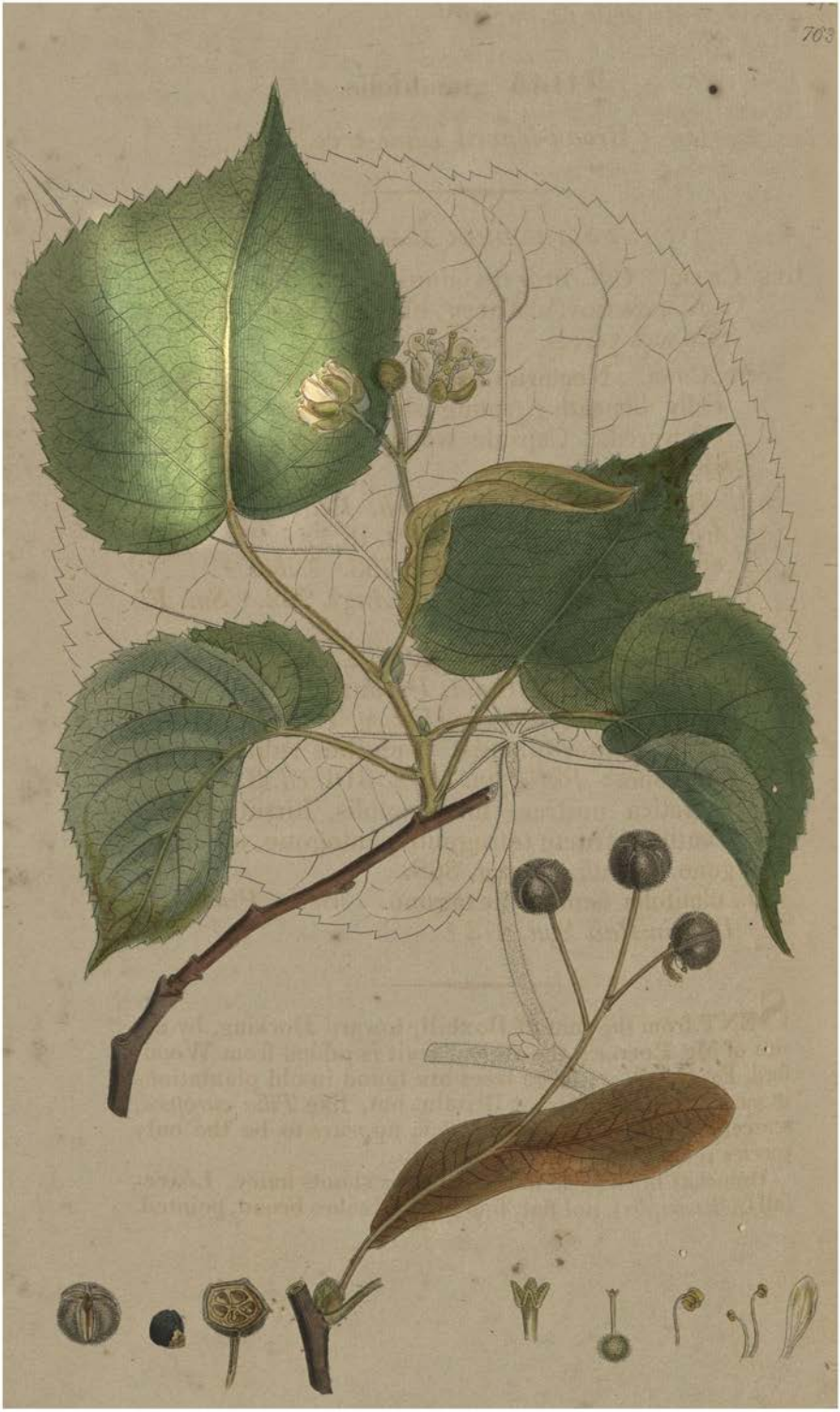
SYN. Erythræa latifolia. *Sm. Engl. Fl. v.* 1. 321. *Hook. Brit. Fl. ed.* 2. 108.
Chironia Centaurium, var. 2. *Sm. Fl. Brit.* 1393.

THE *Erythrææ*, *littoralis*, *pulchella*, and *latifolia*, have been by Linnæus, or by Sir J. E. Smith in his earlier writings, considered as varieties of the *common Centaury*, *E. Centaurium*; and whether they are justly separated from it in recent botanical publications, is a question we are hardly competent to decide. The present has, indeed, a very peculiar aspect, especially the specimen here figured, which was sent to us by W. Wilson, Esq. of Warrington, having a very stunted mode of growth, very broad, distinctly ribbed leaves, and flowers so numerous and clustered just above the root-leaves, that no stem is visible. We possess, however, individuals from the same excellent botanist, in which these characters are less evident, and the species seems to be passing into the *E. Centaurium*.

Whether a species or variety, the merit of discovering

the *E. latifolia* is due to Dr. Bostock and Mr. Shepherd, who gathered it on sandy ground near the sea, to the north of Liverpool, in 1803. Mr. W. Wilson has since found it near Holyhead, Mr. T. Drummond in the county of Down, Ireland; and the Rev. G. Gordon in the Isle of Staffa.

It appears always to grow on the sandy sea-shores. It is annual, and flowers in July and August.—W. J. H.



TILIA grandifolia.

Broad-leaved Lime-tree.

POLYANDRIA Monogynia.

GEN. CHAR. *Cal.* in 5 divisions, deciduous. *Pet.* 5. *Caps.* superior, leathery, obovate, of several close cells and valves. *Seeds* few.

SPEC. CHAR. Nectaries none. Leaves downy, especially beneath; young shoots hairy. Umbels 3-flowered. Capsule woody, downy, turbinate with prominent ribs.

SYN. Tilia grandifolia. *Ehrh. Beitr. v.* 5. 158. *Arb.* 8. *Sm. Engl. Fl. v.* 2. 18.

T. europæa ε. *Linn. Sp. Pl.* 753. δ. *ibid.* ?

T. europæa γ et δ. *Huds. Fl. Angl.* 232. *Sm. Fl. Brit.* 571.

T. corallina. *Sm. in Rees Cycl. n.* 2. *Comp. ed.* 4. 94.

T. platyphylla. *DeCand. Prod. v.* 1. 513.

T. maximo folio. *Bauh. Hist. v.* 1. *Pt.* II. 137 *f.*

T. foliis molliter hirsutis, viminibus rubris, fructu tetragono. *Raii Syn. ed.* 2. 316. *ed.* 3. 473.

T. sylvatica nostras, foliis amplis, hirsutie pubescentibus, fructu tetragono, pentagono, aut hexagono. *Pluk. Almag.* 368.

T. ulmifolia semine hexagono. *Merr. Pin.* 118? *Dill. in Raii Syn.* 473?

SENT from the foot of Boxhill, toward Dorking, by desire of Mr. Borrer; the ribbed fruit is added from Woodford, Essex. Very large trees are found in old plantations in various parts of Great Britain, but, like *Tilia europæa*, scarcely indigenous. *T. parvifolia* appears to be the only species really native.

Branches brown, smooth, first year shoots hairy. Leaves full (*foliis amplis*), not flat, four or five inches broad, pointed,

unequal and somewhat heart-shaped at the base, acutely serrated, the upper surface covered with minute hairs; underneath softly downy, the nerves and veins fringed, especially about the origin of each. Footstalks smooth, shorter than the leaves. Flower-stalks with an oblong, smooth, pale, membranous bractea attached, usually bearing three greenish flowers, sometimes only one or two, very rarely five. Germen densely hairy. Capsule turbinate; cuticle coarsely woolly, with four or five, or—according to Plukenett and Smith, six, prominent ribs covering the divisions of the woody valves. When the cuticle is scraped off, no angles appear; in the fruit from Boxhill these ribs were scarcely discernible. Seeds dark chestnut, only one of which comes to perfection, destroying the dissepiments.

This lime-tree may be readily distinguished by its broad, full, hairy leaves, the young shoots also being hairy, by the umbel of three flowers, and by the prominent ribs of the cuticle of the capsule.

It seems likely that *T. ulmifolia, semine hexagono* of Merrett, *T. foliis molliter hirsutis, viminibus rubris, fructu tetragono* of Ray, and *T. sylvatica nostras, foliis amplis, hirsutie pubescentibus, fructu tetragono, pentagono aut hexagono* of Plukenett, are identically the same, and ought not to be distinguished as varieties; the latter author or his printer having inserted as distinct the above plant of Merrett, "from Whitstable in Surrey, and near Darkin," instead of referring to it as a synonym. This error has been perpetuated by Dillenius, in his edition of Ray's *Synopsis*, and is not the only instance of his adding plants which were already inserted. At the same time it must be acknowledged that, were it not for the words "*semine hexagono*," it might with equal probability be united with *T. parvifolia*, as is done by Haller under *n.* 1020 *β*. The figure of *T. vulgaris platyphyllos* in Bauhin's *Historia Plantarum Universalis*, is not *T. grandifolia*, but *T. europæa*, as referred to by Ray.

It is difficult to discover the reason of this species being called Red Lime, as the twigs are not observed to be more red than those of *T. europæa*.—E. F.

Collema microphyllum?

COLLEMA microphyllum.

Small-lobed Collema.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Apothecia* scutelliform, (immersed, sessile, or somewhat stalked,) formed entirely from the thallus, and of a homogeneous substance without and within, subcartilaginous when dry, subgelatinous when wet; *margin* and *disk* of the same, or sometimes (when dry) of different, colours.—*Acharius.*

SPEC. CHAR. Lobes of the thallus crowded, imbricated, minute, pulpy, much divided; ultimate segments roundish, crenulate, somewhat convex. Scutellæ sessile, with a raised entire margin; at length flat.

SYN. Collema microphyllum. *Ach. Lich. Univ.* 630. *Syn.* 310.

DISCOVERED by the Rev. G. R. Leathes, on elm-bark, near Bury St. Edmund's, Suffolk, and communicated thence by Mr. Dawson Turner to Acharius, who has commemorated the species as occurring also in Sweden, France, and Switzerland.

Thallus spreading irregularly, appearing, to the naked eye, a rugged, dark, greyish brown crust, blacker with a tinge of green when wet; but found, when magnified, to be composed of closely imbricated lobes, of uncertain figure and variously divided, with an uneven surface, as if powdered or minutely granulated and cut at the edges into small, rounded, crenulate, flattish or convex segments: substance hard and opaque when dry; when wet subgelati-

nous and pulpy, but not very thick. Scutellæ on our specimens small and not numerous, sessile, or a little raised above the level of the thallus, with an incurved entire margin coloured like the thallus, and a concave, orange-red disk; at length flat, the margin still entire, but now less elevated and tinged with red.

The crust of this *Collema* is considerably like the supposed thallus of the very anomalous *Lichen spongiosus*, *t.* 1374. It has not the black fibrous substratum of *Lecidea microphylla*, *t.* 2128, to which Acharius compares it, and to some states of which it has, in other respects, much resemblance. The species is more likely to be confounded with *C. fragrans* *, *t.* 1912; but the thallus of that Lichen is less imbricated, with larger, less divided lobes, the edges of which are less notched or crenate, and somewhat raised, and the surface has not the powdered or granulated appearance when dry.—W. B.

* The "aromatic scent" which suggested this name, was probably accidental to Sir J. E. Smith's specimens. The species is not rare in Sussex, and we find in it no odour but that often perceptible in other pulpy *Collemata*, especially in specimens that have been dried and subsequently moistened.

December 1st 1837.

ALISMA ranunculoides; *var.* repens.

Lesser Water-Plantain; creeping var.

HEXANDRIA Polygynia.

GEN. CHAR. *Cal.* of 3 leaves. *Petals* 3. *Capsules* many, clustered, distinct, indehiscent, 1-seeded. *Embryo* much curved.

SPEC. CHAR. Leaves all radical, linear-lanceolate. Scape umbellate. Fruit globose, squarrose. Capsules acute.

SYN. Alisma ranunculoides. *Linn.—Engl. Bot. t.* 326.

β. smaller, with creeping runners. Scapes mostly single-flowered.

A. ranunculoides β. *DeCand. & Dubis, Bot. Gall. v.* 1. 437. *Hook. Brit. Fl. ed.* 2. 172. *Lam. Encycl. v.* 2. 515.

A. repens. "*Davies Welsh Bot.* 36." *Sm. Engl. Fl. v.* 2. 205. *Cavan. Ic. v.* 1. 41. *t.* 55.

ALTHOUGH Sir James E. Smith adopted this plant as a species of *Alisma*, distinct from the *A. ranunculoides*, in the 2nd volume of the *English Flora*, yet in the list of corrections given in the 4th volume of that valuable work, he has candidly acknowledged that it ought to be united with the last-mentioned species, differing from *A. ranunculoides* as *Ranunculus reptans* does from *R. Flammula*. We have nevertheless thought the plant deserving of a place in *English Botany*.

The same variety occurs in Spain and in France, and

Lamarck and DeCandolle had at first described it as a distinct species. Afterwards the latter referred it to the *Lesser Water-Plantain.*

Mr. Davies found it growing on the margins of several lakes in North Wales, flowering in September and October. Our specimens were obligingly communicated from Anglesea, by William Wilson, Esq., in the month of August. —W. J. H.

December 1st 1831.

ROSA Wilsoni.

Wilson's Rose.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* urn-shaped, fleshy, contracted at the orifice, terminating in 5 segments. *Seeds* (*carpels*) numerous, bristly, fixed to the inside of the calyx.

SPEC. CHAR. Prickles crowded, unequal, straight, intermixed with setæ. Leaflets simply serrated, hairy; their disk eglandulose. Calyx simple. Fruit nearly globular, with a short neck.

SYN. Rosa Wilsoni. *Borr. in Hook. Brit. Fl.* 228.

THIS beautiful addition to our Roses was discovered by William Wilson, Esq., in July 1826, near Bangor Ferry, on a declivity by the Menai, where it spreads widely by the root, and forms bushes about three feet high, with slender diffuse branches, and foliage which early acquires a remarkable tinge of red. In general habit it most resembles *R. rubella*, *t.* 2521; but the prickles are more unequal, and the larger ones considerably dilated at the base, and they are intermixed with a much smaller proportion of gland-tipped setæ; the leaflets are larger, broader, and flatter, of a deeper and brighter green, although not shining, and sprinkled with hairs on both sides, but chiefly on the nerves and veins beneath; the flowers are not so, generally solitary or merely in pairs, and are subtended by larger and broader bracteas. The simple serratures, and the want of glands on the disk of the leaflets, distinguish it

from *R. involuta;* and the same characters, and the much less dense pubescence, from all the varieties of *R. Sabini.*

Leaflets 9 or 7, except in the upper leaves towards the flowers, ovate, not acuminate, the terminal tooth being scarcely longer than the rest; the base, especially of the terminal leaflet, usually somewhat cordate; their mid-ribs and leaf-stalk sprinkled with glands, and the latter furnished with a few mostly falcate prickles. Stipules dilated towards the points, which are divaricated and acute; their edges fringed with minute red glands; their disk eglandulose. Flower-stalk setose. Calyx-tube almost globular; segments setose and glandulose, simple, or merely bearing a capillary pinna or two; their points a little dilated. Petals exceeding the calyx, of a beautiful dark pink.—Styles included, hairy: mass of stigmas round and protuberant. Fruit orange-scarlet. The twigs, prickles, flower-stalk and calyx, are in general richly tinged with purple.

The figure was drawn from wild specimens received from Mr. Wilson, assisted, for the flower and fruit, by others, from bushes which had been removed to his garden. —W. B.

Aspidium rigidum.

December 1st 1831.

ASPIDIUM rigidum.

Rigid Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Clusters of fructification* roundish, scattered. *Involucre* orbicular, fixed by the centre, or orbiculari-reniform, and fixed at the sinus.

SPEC. CHAR. Fronds lanceolate, bipinnate. Pinnules subcordato-oblong, obtuse, pinnatifido-serrate; the segments sub-bidentate; the teeth mucronulate. Stipes and rachis chaffy. Fructifications in the upper half of the frond.

SYN. Aspidium rigidum. *Swartz, Syn. Fil.* 53. *Schkuhr, Fil.* 40. *t.* 38. *Willd. Sp. Pl. v.* 5. 265. *Hook. Brit. Fl. ed.* 2. 442.

A. spinulosum γ. *Hook. Brit. Fl. ed.* 1. 444.

Polystichum rigidum. *Decand. & Dubis, Bot. Gall. v.* 1. 538.

Polypodium rigidum. *Hoffm. Fl. Germ. v.* 2. 6.

STIPES 2 to 4 inches in length, clothed as is the rachis throughout with linear-subulate chaffy scales. Frond from 6 to 8 or 10 inches or a foot high, lanceolate, bipinnate, of a rather rigid habit, and of a dark green colour. The pinnæ closely arranged, cordato-lanceolate, with close-set oblong or oblongo-cordate pinnules, from ½ to ¾ of an inch long: these are obtuse, glabrous on both sides, pinnatifid, with roundish, 2—3-dentate lobes, the teeth spinulose.

Fructifications confined to the upper half of the frond. Involucres convex, rotundato-reniform, covering numerous brown capsules.

Our valued friend, the Rev. W. T. Bree, was so fortunate as to discover this rare fern on Ingleborough, in Yorkshire, and kindly communicated specimens of it to us some years ago. We had no hesitation in referring the plant to the *Aspidium rigidum* of Swartz and Willdenow. It entirely corresponds with their description, with the excellent figure of Schkuhr above quoted, and with our continental specimens; but we have sometimes entertained doubts whether it ought to be considered distinct from some of the acknowledged varieties of *A. spinulosum*. Mr. Bree has however cultivated it for some years, during which it retains its native characters, and we have consequently given it in the 2nd edition of the *British Flora* as specifically distinct. From *A. spinulosum* it is known by its smaller size, narrow fronds, more closely placed and less compound pinnæ.

Our figure is drawn from a cultivated specimen, from a root removed to the garden, from Ingleborough, by Mr. Bree.—W. J. H.

2725.
1871

2725.

SALIX petræa.

Dark-green Rock Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* and *Nect.* as in the male. *Cor.* none. *Capsule* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Erect. Young shoots densely hairy. Leaves oblong, serrated, carinate, twisted, reticulated with deeply sunken veins; beneath hairy, glaucous, at length pale green. Stipules large, half heart-shaped, flattish, with few glands. Germen stalked, naked, wrinkled towards the point. Style divided, longer than the cloven stigmas.

SYN. Salix petræa. *Salict. Woburn.* 193. *t.* 97. *Hook. Engl. Fl. ed.* 2. 424.

ANOTHER of the British Willows first distinguished by the late Mr. G. Anderson, who is understood to have given it the name of *S. petræa*, and who communicated the plants from which our figure was drawn. We have wild specimens from the mountains of Breadalbane.

Shrub sometimes upwards of 15 feet high, with crooked ash-coloured branches and brown twigs. Young shoots covered with short, horizontal or deflexed hairs. Leaves slightly hairy above, very dark green and shining; blueish and rather more hairy, or woolly, beneath; at length naked on both sides, except on the leaf-stalk and midrib, and losing, or very nearly losing, the glaucous tinge beneath: their edges slightly recurved, serrated throughout with

blunt gland-tipped teeth; the leaves of strong shoots about two inches in length, oblong (the sides partly parallel), almost cordate at the base, and somewhat rugose from the deeply sunken veins; those of small twigs often rather narrowed towards the base, so as to be almost obovate, with a point: small lower leaves bluntish. Stipules remarkably large, sessile, acute, serrated, with glands on the edges, and a few on the disk near the point of insertion. Catkins on short hairy stalks, with 3 to 5 oblong, bluntish, serrated floral leaves, about as long, in the earliest stage of flowering, as the catkin, which is then ovate and usually less than half an inch in length, but gradually becomes cylindrical, and three or four times as long. Flowers rather closely set. Calyx-scale obovate or oblong, blunt, often emarginate, brown in the upper half, with scattered, long, silky hairs, which form a white fringe. Nectary single, interior, short, truncate. Germen naked, wrinkled towards the apex; at first nearly subulate, subsequently compressedly quadrangular, or obsoletely two-edged, bulging at the base, tapering upwards, and again somewhat thickened immediately below the style; its stalk hairy, at first very short, at length almost equalling the calyx-scale. Style moderate, divided one-third or more of its length, so as to form pedicels to the thickish, cloven, and at length spreading stigmas. The flowers come forth with the young leaves about the beginning of May.

This Willow is remarkable for the long, dark, shining, wavy leaves and large stipules of its strong shoots. It is nearly allied to *S. hirta*, *t.* 1404, and still more nearly, perhaps, to *S. stylaris* of Seringe, *Monogr. des Saules de la Suisse*, *p.* 62, which is regarded as *S. Amaniana* of Willdenow; but the specimens published by Seringe, *Saules de la Suisse*, *n.* 21 and 86—88, have a germen without wrinkles and a longer style, and leaves, however various in outline, all permanently glaucous beneath. If *S. myrsinites* of Hoffmann belongs, as it probably does, to this *S. stylaris*, the germen and style are badly represented in *Hist. Sal. t.* 18. It is surely by error that Koch has placed *S. petræa* under his *S. Arbuscula*, with *S. phylicifolia* of Smith, and not under his own *S. phylicifolia*, with *S. Amaniana* and its affinities.—W. B.

Lecidea pulverea?

LECIDEA pulverea.

Pale-green mealy Black-shielded Lecidea.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Patellulæ* sessile or more or less immersed, with a margin of a substance different from the thallus.

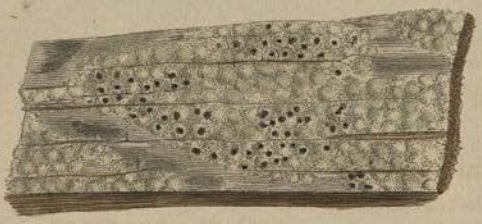
SPEC. CHAR. Crust indeterminate, soft, mealy, pale greyish green. Patellulæ sessile, largish, black, internally pale; margin livid, slightly raised, evanescent.

RECEIVED in 1807, from Charles Lyell, Esq., who discovered it on oak-bark in the New Forest. Other specimens, spreading over moss, were communicated to Mr. Dawson Turner from Ireland, by the late Miss Hutchins.

Thallus composed of minute powdery particles, which form an irregularly effused, soft crust, of moderate thickness, pale greyish green or yellowish when living, greyish white and unchanged by moistening after it has been for some time dried. No filmy substratum has been observed. Patellulæ orbicular whilst young, with a slightly elevated, narrow, somewhat livid or brownish margin, and an unpolished, black, flat disk, pale brown or whitish within: subsequently the outline becomes wavy and irregular, and at length the margin disappears and the disk is found somewhat convex. The largest patellulæ almost equal a hempseed in diameter.

It has been suspected that this Lichen might be a variety of *L. incana, t.* 1683: but Mr. Lyell sent it as distinct, and Miss Hutchins maintained the same opinion, observing that

she found the patellulæ of all ages constantly black. It may be added that their substance is not so thick, and their margin, especially when young, narrower and less rounded. In dried specimens the thallus bears a general resemblance to that of *Lecanora farinaria* (the subject of our next plate), but when recent it is of a greener hue. The plant nearly answers to the character given in the Acharian *Synopsis*, *p.* 27, to *Lecidea tenagea*, which Fries, in his *Lichenographia Europæa Reformata*, *p.* 263, regards as a state of his *Biatora vernalis*, the *Lichen vernalis* of *Engl. Bot. t.* 845, and *Lecidea luteola* of Acharius.—W. B.



Lecanora farinaria?

January 1st 1832.

LECANORA farinaria.

White mealy-crusted Lecanora.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Scutellæ* sessile, with a margin of the same substance as the thallus.

SPEC. CHAR. Crust indeterminate, soft, mealy, pulvinulate, white. Scutellæ slightly elevated; margin mealy, uneven; disk livid-brown, pale within.

ON old rails, not uncommon in Sussex, but rarely bearing scutellæ, which have been observed at Henfield and at Hurstpierpoint.

Thallus composed of minute mealy particles, with a filmy or slightly tartareous substratum observable, under favourable circumstances, beneath them, from which they burst, and which they usually soon conceal, becoming confluent in small, roundish, pulvinate masses, and by degrees forming an uneven crust, varying in thickness, and irregular in outline, and often spreading to considerable extent: its colour, when perfect, white, with the faintest possible tinge of green, in long-kept specimens greyish. Scutellæ, when found at all, usually numerous and often clustered, but small and inconspicuous; their outline mostly wavy, with a thickish inflexed margin from the crust, which in old shields is sometimes so depressed as to leave the edges of the disk bare, and to render the generic character ambiguous: disk at length convex; its hue a livid brown varying in intenseness, the internal substance paler; when dry, nearly black externally and almost white within.

The general resemblance of this species to *Lecidea pulverea* has been already noticed. It is liable to be mistaken also for *Lecanora Turneri*, *t.* 857, and for the white variety of *L. Hœmatomma*, *t.* 486, which Acharius has called *L. Stonei*: but the thallus has not the peculiar fibrous edges remarkable in those Lichens, and is otherwise different from both in structure, and no three Lichens are more decidedly distinguished by their scutellæ. In respect of these, *L. farinaria* resembles some varieties of *L. subfusca* and *L. angulosa*.—W. B.

Lecanora aspersa?

LECANORA aspersa.

Powdered Warty Lecanora.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Scutellæ* sessile, with a margin of the same substance as the thallus.

SPEC. CHAR. Substratum of the thallus filmy, black; warts scattered, tartareous, slightly convex, olive-green, with pale green soredia. Scutellæ small, elevated; margin thick, inflexed; disk black.

FIRST noticed on loose flints in the neighourhood of Bury St. Edmund's, by the Rev. G. R. Leathes. It is found abundantly near Portslade, and in some other places on the Downs of Sussex, there also on scattered flints; but it is not of general occurrence. Both in Suffolk and in Sussex the scutellæ are very rare.

The thallus consists of a black film, beautifully dendritic at the edges when the surface on which it grows is perfectly even, and numerous small, roundish, somewhat lobed, slightly convex warts, unpolished and of an olive-grey hue when dry, greener when wet, which are usually scattered separate or in little clusters, more rarely collected into a tolerably compact crust: their surface marked with minute soredia of pale green powder, changing to a lead-grey in long-dried specimens. Scutellæ minute and inconspicuous, raised above the surface of the thallus so as to be contracted at the base; with a thick inflexed margin, of the substance and colour of the warts, at first entire, afterwards uneven and somewhat crenate, and a flat dull-black disk.

This Lichen has been mistaken for *L. tuberculosa*, *t.* 1733; but the warts of the thallus of that species are very prominent, even, and not powdery, and the substratum is of the same colour, not black: the scutellæ also are more conspicuous, and of a glaucous hue. In the black substratum and in the dispersion of the warts, *L. aspersa* resembles *Lecidea atro-alba*, *t.* 2336, and *L. verruculosa*, *t.* 2317, but, besides the generic characters, it differs from both in the colour of the warts and in the powdery soredia. The scutellæ are most like those of some imperfect states of *L. atra*, *t.* 949, but the structure of the thallus is very dissimilar.—W. B.

SALIX propinqua.

Flat-leaved upright Mountain Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* and *Nect.* as in the male. *Cor.* none. *Capsule* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Erect. Young shoots minutely pubescent. Leaves elliptical, obscurely crenate, nearly flat, with slightly sunken veins, nearly naked on both sides; pale green beneath. Stipules small, vaulted, glandulose. Germen stalked, silky towards the point. Style longer than the notched stigmas.

THIS Willow also was discovered in Britain by Mr. Anderson, and we know it only from plants received from him. Finding in these some apparently distinctive characters, we venture, after much hesitation, to add another presumed species to a section of the genus of which almost every species is doubtful.

Planted by the side of *S. petræa*, it has attained in the same period scarcely half the height of that Willow, and differs from it likewise in the following particulars. The pubescence of the young shoots is less dense and less conspicuous, and the leaves of such shoots are more truly elliptical, less carinate, and scarcely waved or twisted, although the acute point is usually oblique and deflected; they are

not of so dark a green, nor so shining, have the veins much less deeply exarate, and are scarcely pubescent on either side, except on the stalks and about the midrib, and their slightly recurved edges are more obscurely serrated, or rather crenate. The stipules are small and vaulted, their upper disk, as well as edges, covered with glands. The germen is similar in shape, but beset in the upper part with appressed, white, silky hairs; its stalk naked or very slightly hairy. The style is not cloven, and the stigmas spread but little. The underside is blueish in young leaves.

The specimens with "partially silky germens" mentioned under *S. petræa* in Hooker's *English Flora, p.* 428, probably belong to *S. propinqua.*—W. B.

ACONITUM Napellus.

Common Wolf's-bane or Monk's-hood.

POLYANDRIA Pentagynia.

GEN. CHAR. *Cal.* none. *Pet.* 5, the upper one hooded. *Nect.* 2 on long stalks, recurved. *Caps.* 3—5.

SPEC. CHAR. Upper petal arched at the back; lateral ones hairy at the inner side. Germens three, smooth. Leaves deeply five-cleft, cut, with linear segments, furrowed above. *Sm.*

SYN. Aconitum Napellus. *Linn. Sp. Pl.* 751. *Willd. v.* 2. 1235. *Sm. Engl. Fl. v.* 3. 31. *v.* 4. 269. *Hook. Brit. Fl. ed.* 2. 260. *Woodv.* 16. *t.* 6. *Purt. v.* 3. 47. note. "*Ser. Acon.* 152. *f.* 41."

Aconitum vulgare. *De Cand. Syst. v.* 1. 371.

Napellus verus cæruleus. *Ger. Em.* 972. *f.* 3.

THIS hardy perennial was, according to Gerarde, "universally known in our London gardens and elsewhere" nearly two hundred and fifty years ago, and probably might have been cultivated long before. It is therefore by no means wonderful that it should have naturalized itself in different parts of England; in which state it attracted the attention of the Rev. Edward Whitehead in 1819 by the side of the river Teme in Herefordshire, and more abundantly on the banks of a brook running into that river. In the following year it was discovered by Mr. Thomas Clark, jun., very abundantly on the banks of a stream at Ford, near Wiveliscombe, in Somersetshire, where it continues along the stream at intervals to Milverton, a distance

of three miles, growing in straggling or dense patches of blue, conspicuous at a distance, avoiding wet places; therefore the term "watery ground" in *English Flora* is hardly correct. The statement that it had been found "in other similar situations in that neighbourhood," arose from a misunderstanding: it is confined to the Ford stream, from whence the specimen here figured was communicated by Mr. Clark. Mr. Tozer is stated in Hooker's *British Flora, ed. 2,* to have found it also below Staverton-bridge, Devon.

The Monk's-hood, so well known to almost every cottager, having been already described in *English Flora*, it is only necessary to refer to that accurate work for the natural characters.

The discovery of Mr. Whitehead was first brought into notice by Purton in a note in the Appendix to the *Midland Flora.* Subsequently the *Aconitum Napellus* was thought by Smith worthy of a place in *English Flora:* undoubtedly from the wild situations in which it has chosen to fix itself, it has a better right than many denizens to be so recorded. —E. F.

January 1st 1832.

CAREX phæostachya.

Short brown-spiked Carex.

MONŒCIA Triandria.

GEN. CHAR. *Spikes* imbricated, dicecious, or androgynous. *Cal.* a single glume. Barren flower, *Cor.* none. Fertile flower, *Cor.* urceolate, of one piece, persistent and inclosing a nut. *Stigm.* 2, 3.

SPEC. CHAR. Sheaths shorter than the flower-stalks. Fertile catkins two, distant, erect, oval. Fruit ovate, triangular, smooth, with a cloven beak. Scales of the barren catkins pointed; of the fertile ones obtuse. *Sm.*

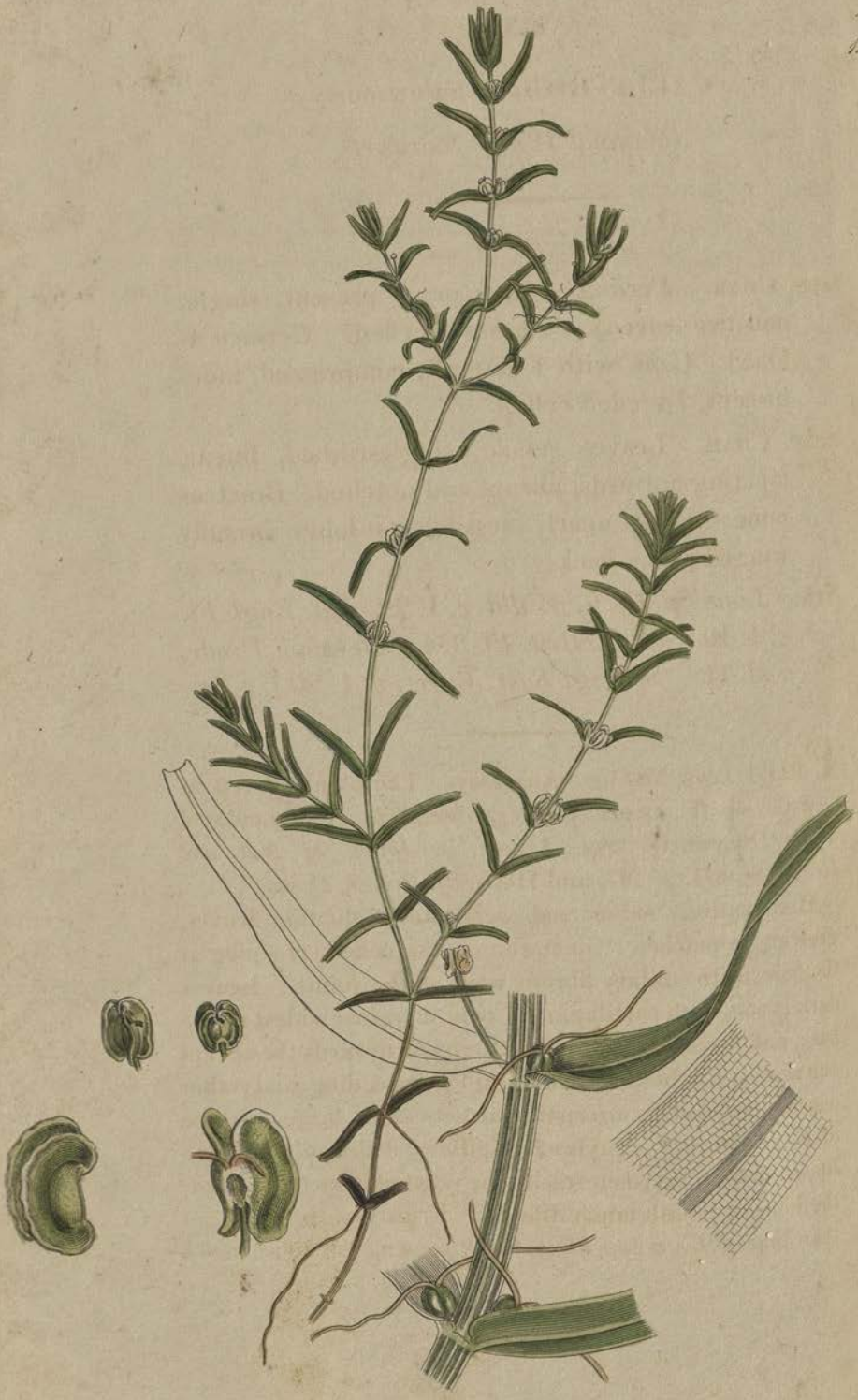
SYN. Carex phæostachya. *Sm. Eng. Fl. v.* 4. 99.
C. salina. *Don, Herb. Br.* 216. not of *Swartz, &c.*

FOUND by the late Mr. George Don upon rocks on the high mountains of Cairn Gorm, Inverness-shire, also on the Clova mountains, and on Ben Macdowie, near the head of the river Dee. A drawing made by the late Mr. Sowerby, and preserved by Sir J. E. Smith in his herbarium attached to the specimen, affords an opportunity of figuring this rare *Carex*, which was at first imagined to be *C. salina* of Swartz and Wahlenberg, but afterwards introduced into *English Flora* as an undescribed species.

"Roots creeping extensively, with long, smooth, pale, branched fibres. Stem solitary, 5 or 6 inches high, erect, somewhat triangular, furrowed, smooth; leafy at the base. Leaves upright, or a little spreading, flat, taper-pointed, smooth, about half the height of the stem. Bracteas similar,

but smaller, with considerable, rather swelling sheaths. Flower-stalks triangular, smooth, longer than the sheaths, though shorter than the bracteas. Fertile catkins distant, nearly half an inch long, ovate, rather dense, with broad, bluntish, pointless, dark-brown scales; barren one solitary, ovate, with ovate, dark-brown, acute, often considerably pointed scales. Stam. 3. Stigm. 3. Fruit green tinged with brown, ovate, or elliptical, triangular, scarcely ribbed, smooth, with a broadish brown beak, projecting beyond the scale, acutely cloven, but less deeply than in" *C. speirostachya*, "and destitute of the white membranous border for which that species is remarkable." *Sm.*

There does not appear much danger of this species being confounded with, or mistaken for, *C. speirostachya;* it far more resembles *C. panicea*, of which it may possibly be an alpine variety: but it would be unsafe to pronounce it so without much more attention than it is possible to give, unless it could be procured in a fresh state; nor would it be doing justice to the memory, either of George Don the discoverer, or of Smith who has so minutely described it.—E. F.



Pubd 1st 1832.

CALLITRICHE autumnalis.

Autumnal Water Starwort.

MONŒCIA Monandria.

GEN. CHAR. *Perianth* none (or, if present, single, and two-leaved). *Anther* 1-celled. *Germen* 4-lobed. *Caps.* with 4, laterally compressed, indehiscent, 1-seeded cells.

SPEC. CHAR. Leaves sessile, single-ribbed, linear, tapering upwards, abrupt and notched. Bracteas none. Fruit nearly sessile, its lobes broadly winged at the back.

SYN. *Linn. Sp. Pl.* 6. *Willd. v.* 1. 29. *Sm. Engl. Fl. v.* 1. 10. *Hook. Brit. Fl.* 384. *DeCand. Prodr. v.* 3. 71. *Spreng. Syst. Veget. v.* 1. 20.

FROM Llyn Maelog, Anglesey. The plant figured at *t.* 2606 of this work is *C. pedunculata* (Pedunculated Water Starwort). See Arnott, in *Journ. of Nat. and Geogr. Sc. v.* 1. *p.* 427, and Hooker's *British Flora.*

Herb entirely submersed, destitute of floating leaves, growing in patches. Stem annual, branched, creeping at the base, with solitary fibrous roots at the joints. Leaves dark green, with cartilaginous pale margins, widest at the base, and becoming gradually narrower towards the abrupt and acutely notched extremity; widely spreading, and rather densely crowded in alternate pairs, twice as large as those of *C. pedunculata.* Styles 2, capillary, deflexed. Stigmas linear, acute. Germen sessile, or very indistinctly stalked; the lobes at length much dilated. Fruit four times larger than that of *C. pedunculata,* dark brown, the lobes much

compressed and loosely cohering, with broad, wavy, and almost chaffy margins, so much dilated as to conceal the short pedicel and the remains of the styles; one or two of the lobes often abortive. Embryo curved.

In specimens of *C. pedunculata* kindly communicated to the writer by Mr. Borrer, the lobes of the fruit are destitute of border, and merely rounded at the back; the leaves are linear, of the same width throughout, less abrupt and more slightly notched at the extremity than in *C. autumnalis:* the pedicels of the fruit are inconstant; and we should hesitate in pronouncing *C. pedunculata* to be essentially distinct from *C. verna*, unless the connate insertion of the leaves observable in *C. verna* should prove to be permanent. An attempt on the part of the writer to cultivate *C. pedunculata* has not been satisfactory in its results; while *C. autumnalis*, under the same treatment, has been found to retain its original properties unaltered.

The synonyms are given by Professor Hooker. Fl. June —October.—W. W.

B.f
B
β
α
α.m
γ
γ.m
δ
February 1st 1829

SALIX ambigua.

Ambiguous Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* and *Nect.* as in the male. *Cor.* none. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Leaves oval, obovate, or lanceolate, pubescent, slightly toothed, with a recurved point; somewhat rugose above; glaucous with prominent veins beneath. Stipules half-ovate, acute. Catkins stalked, erect, cylindrical. Germen stalked, densely silky. Style very short. Stigmas short, at length cloven.

SYN. Salix ambigua. *"Ehrh." Willd. Sp. Pl. v. 4. 700. Hook. Brit. Fl. ed. 2. 418. Koch, Sal. Europ. 49. Bluff & Fing. Fl. Germ. v. 2. 561.*

β. *major.* S. ambigua β. *Hook. l. c.* ?
S. versifolia. *Ser. Saules de la Suisse, n. 66. Monogr. 40.*

γ. *spathulata.* S. ambigua γ. *Hook. l. c.*
S. spathulata. *Willd. Sp. Pl. v. 4. 700. Bluff & Fing. Fl. Germ. v. 4. 566.*

δ. *undulata.* "S. spathulata *Willd.* var. undulata." *Prof. Mertens.*

GRAVELLY heaths in Sussex, Essex, and Suffolk, produce this Willow, which has been observed also in Perthshire, Angusshire, Caithness, Orkney, and the He-

brides. All the figures, except that of the leaves of δ, were drawn from cultivated plants, of which those of α. and γ. had been removed by Mr. Forster from Epping Forest to his garden.

Our α. is a small straggling shrub, with branches sometimes procumbent, sometimes rising a foot or two from the ground. Young twigs downy; the pubescence appressed upwards. Leaves on short stalks, thin, somewhat waved, flat, or slightly carinate, somewhat rugose, with veins sunken above and prominent beneath; the primordial ones obtuse, the rest acute, with a short recurved and often oblique point, the largest, even on strong shoots, rarely an inch in length; upper surface either almost naked, darkish-green and rather shining, or grey-green, or even hoary, from the varying quantity of the appressed pubescence; underside also sometimes almost bare, and then glaucous, but more usually furnished, often very copiously, with appressed silky or cottony hairs; edges more or less recurved, crenate and toothed, the teeth sometimes, especially in male plants, distant and indistinct. Stipules minute, except on strong shoots, where they are half-ovate or half-cordate, sessile or on short stalks, slightly vaulted, with a few gland-tipped serratures, or more rarely entire, their point nearly straight, acute. Catkins cylindrical, scarcely more than half an inch long whilst in flower, occasionally almost sessile, but usually on a stalk of nearly half their length, with about five small, silky floral leaves, which are mostly oval and obtuse, but sometimes narrower and more pointed. Flowers close-set at first, but soon becoming loose in the female catkins. Calyx-scale thin, pale, oblong, rounded, and tinged with red or brown at the point, covered more or less closely with long silky hairs. Nectary single, exterior, oblong or linear, truncate. Stamens two. Germen ovate-lanceolate, white with dense, silky, appressed hairs; its stalk hairy, at first short, but as the flowering advances often equalling or exceeding the calyx-scale. Style in general scarcely perceptible, sometimes a little lengthened. Stigmas pale, often

reddish, short, thick, connivent, at length cloven. The flowers appear before the leaves, or when these are but beginning to burst forth, about the end of April.

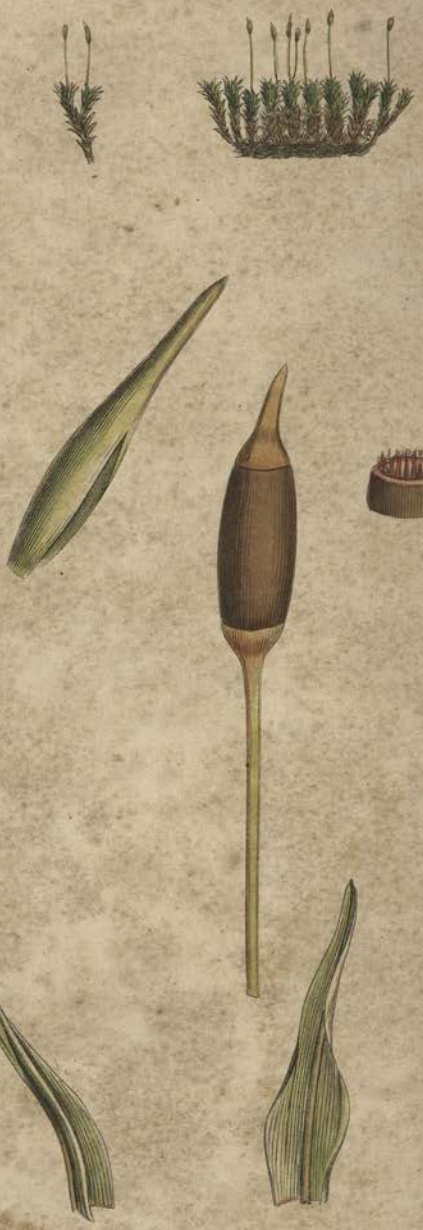
S. ambigua approaches on the one side to *S. aurita*, with the smallest varieties of which it is most liable to be confounded, and on the other to *S. fusca*; differing from the former by its less rugose, less vaulted, and less distinctly serrated leaves, and their more delicate texture and less woolly pubescence, and the smaller, flatter, and less oblique stipules; from the latter by its less silvery pubescence, and the more uneven upper surface of its leaves, and their more prominent veins beneath, as well as by some minute characters in the flowers. Koch regards it as a hybrid between the two.

It varies much in the procumbent, ascending, or more erect mode of growth, in the paler or darker brown tinge of the twigs, and in the quantity of pubescence. *S. spathulata* of Willdenow, which we now fully concur with our friend Prof. Hooker in regarding as a mere variety, scarcely differs but in the narrower base of the leaf. The style has been supposed to be longer; but its length in both varieties seems to vary a little from accidental circumstances The β. of Hooker's *British Flora* has a silvery appearance, from the abundance of silky hairs which clothe the leaves, especially beneath. It is said by Mr. T. Drummond, who found it on bogs near Forfar, to be of upright growth, and 3 or 4 feet high. Our β., although much less silky, probably differs from situation only. It was found on heathy ground at Hopton, Suffolk, and attains, in the garden, the height of 5 feet. It scarcely differs from α., except in the erect growth, and the greater size of all its parts. The referring of *S. proteifolia* of *Sal. Woburn.* to this variety is found to be erroneous. *S. versifolia* of Seringe appears from his specimens to belong to it; but whether *S. versifolia* of Wahlenberg is, as Seringe thought, (notwithstanding the long style and some other discrepancies,) the same, we have no means of deciding: Koch thinks it rather, according to Wahlen-

berg's own original idea, a hybrid offspring of *S. myrtilloides* and *S. limosa* of Wahlenberg. Our δ., which also occurs at Hopton, is remarkable for its lanceolate or almost linear leaves, and distinctly stalked stipules. In our specimens of this, both the style and the stalk of the germen are considerably longer than in the other varieties.

Smith referred Epping Forest specimens of *S. ambigua* to his own *S. prostrata*; but specimens of this last from himself show it to be most nearly allied, as is admitted in *English Flora*, to his *S. fœtida* (the *S. adscendens* of *Engl. Bot.*), next to which it is arranged, as a variety of *S. fusca*, in Hooker's *British Flora*.—*S. caprea pumila, folio subrotundo, subtus incano*, of Dillenius in Ray's *Synopsis*, *p.* 450, which has been regarded as a small variety of *S. aurita*, is probably a synonym of *S. ambigua*.

S. ambigua of Pursh is an altogether different Willow, being very closely allied to *S. fragilis*.—W. B.



Didymodon crispulus

February 1st 1832.

DIDYMODON crispulus.

Curled Didymodon.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruit-stalk* terminal. *Peristome* single, of 32 teeth in pairs. *Calyptra* dimidiate.

SPEC. CHAR. Stems short, scarcely branched. Leaves lanceolato-subulate, erect, with entire and slightly incurved margins, channelled above, blunt and concave at the summit; nerve suddenly inflexed towards the apex and excurrent. Capsule oblong-ovate, erect; lid rostrate.

SYN. Trichostomum crispulum. *Bruch in Unio Itineraria.*

Didymodon reconditus. *Wils. MSS.*

GATHERED, in June 1828, on the grassy limestone declivities of the north coast of Anglesey, near Tros y Marian, and on the Great Ormeshead.

Very nearly allied to *D. brachydontius*, another new species found in similar situations, from which it may be known by the blunt concave summits and brownish hue of the nearly erect leaves; these are gradually widened towards the base, and have a reddish opaque nerve curiously bent at the summit like the keel of a boat: when dry, they are much curled.—W. W.

Didymodon brachydontius.

February 1st 1832

DIDYMODON brachydontius.

Short-toothed Didymodon.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruit-stalk* terminal. *Peristome* single, of 32 teeth in pairs. *Calyptra* dimidiate.

SPEC. CHAR. Stems short, scarcely branched. Leaves widely spreading, linear, with plane margins, bluntish, entire; nerve excurrent, slightly recurved towards the apex. Capsule oblong-ovate, erect; lid rostrate. Peristome very short.

SYN. Trichostomum brachydontium. *Bruch in Unio Itineraria.*

Weissia brachydontia. *Hooker's MSS.*

W. fallax or deficiens. *Wils. MSS.*

GATHERED, in June 1828, on the grassy limestone declivities of Tros y Marian, on the north coast of Anglesey.

Stems tufted. Leaves of equal width throughout, and truly linear, often slightly undulated, light green, with a semi-pellucid nerve, not channelled, but nearly flat, curled when dry; in a moist state widely spreading and somewhat recurved. Teeth of the peristome almost obsolete; so that its generic station can only be estimated by its close affinity to *Didymodon crispulus*, and to a third species, distinguished by Bruch under the name of *Trichostomum flexisetum*, not yet observed in Britain. As the discrepancies between these three species may not be sufficiently obvious or satisfactory to all botanists, we have chosen to retain them in juxtaposition, instead of ranking this Moss among the *Weissiæ*, until its characters have been more fully investigated and established.—W. W.

was communicated by Mr. Peete and Mr. David Don from Dartford Heath: the other, from Epping Forest, was drawn in 1822, by the late James Sowerby, for Thomas Furley Forster, whose opinion as to its being distinct coincided with that of Smith. Whether it be so or not, it is given here as the plant intended by *V. flavicornis* in the *English Flora*.

It differs principally from *V. canina* in size and in the short, blunt, yellowish spur; but it may also be distinguished by the short, firm, rigid, very even, heart-shaped, obtuse leaves, on equally short footstalks; and by the deeper colour of the corolla. The flower is scarcely ever so large as that in the specimen from Epping Forest here figured.

On the supposition that *V. flavicornis* may be a species, by no means intending to decide that it is so, I have ventured to remove *Viola martia alpina folio circinato* of Ray from *V. canina*, placing it as a variety of this plant, although it is very difficult to determine what Violet was found by Lhwyd on Clogwyn y Garnedh above the lake Phynon lâs, which was judged by Richardson to be only a variety of *V. canina*. Nor is it more easy to discover the meaning of Petiver's calling it yellow. At the suggestion of Mr. Borrer, *V. pumila* of Villars and DeCandolle is added as a probable synonym.

I take this opportunity of remarking, that DeCandolle has fallen into an unaccountable error in considering *V. lactea* of Smith and *V. Ruppii* of Allioni as different varieties of *V. montana*; whereas these names are synonyms of one plant, far removed from that species and approaching nearly to *V. canina* and *V. flavicornis*.—E. F.

VIOLA flavicornis.

Dwarf Yellow-spurred Violet.

PENTANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-leaved, lengthened out at the base. *Pet.* 5, irregular, the lowermost spurred behind. *Anthers* slightly cohering. *Caps.* superior, of one cell with three valves.

SPEC. CHAR. Stem ascending, woody, somewhat angular, much branched. Leaves heart-shaped, coriaceous, smooth, and even. Stipulas and bracteas fringed. Calyx-leaves lanceolate. *Sm.*

SYN. Viola flavicornis. *Sm. Engl. Fl. v.* 1. 304. *Hook. Brit. Fl.* 107.

V. canina γ. *Huds. Fl. Angl.* 379. *Sm. Fl. Brit.* 247.

V. pumila. *Vill. Pl. Dauph. v.* 2. 666.? *DeCand. Prod. v* 1. 299.?

Violæ caninæ varietatem, si non speciem diversam, observavit D. Du Bois. *Dill. in Raii Syn.* *5. 364. *t.* 24. *f.* 1.

β. Viola alpina. *Huds. Fl. Angl. ed.* 1. 331.

V. canina γ. *Sm. Engl. Fl. v.* 1. 363.

V. canina δ. *Huds. Fl. Angl. ed.* 2. 379. *Sm. Fl. Brit.* 247.

V. canina β. minor. *DeCand. Prod. v.* 1. 296.

V. martia alpina folio tenello circinato. *Raii Syn.* 366.

Yellow Rock Violet. *Pet. Fl. Brit. t.* 37. *f.* 6.

THIS little Violet, found by Du Bois in pastures near Mitcham, was brought into notice by Dillenius as a variety of *V. canina*, if not a different species, and thought worthy of being figured in his edition of Ray's *Synopsis*. It is not uncommon on heaths. The specimen with the smaller flowers

2
1

RHINANTHUS major.

Branched Yellow Rattle.

DIDYNAMIA Angiospermia.

GEN. CHAR. *Cal.* inflated, 4-lobed. Upper lip of the *Corolla* compressed. *Caps.* of 2 cells, blunt, compressed. *Seeds* imbricated, flat.

SPEC. CHAR. Stem much branched. Leaves linear-lanceolate, serrated. Bracteas taper-pointed. Calyx smooth. Style permanent. Seeds slightly bordered. *Sm.*

SYN. Rhinanthus major. *Sm. Engl. Fl. v.* 3. 121. *Hook. Brit. Fl.* 284. *Ehrh. Herb.* 56.?

R. Crista galli β. *Linn. Sp. Pl.* 840. *Willd. Sp. Pl. v.* 3. 189. *Huds. Fl. Angl.* 268. *Sm. Fl. Brit.* 649. *Winch Fl. North.* 41.

Crista galli angustifolia montana. *Bauh. Pin.* 163. *Prod.* 86.

Pedicularis major angustifolia ramosissima, flore minore luteo, labello purpureo. *Dill. in Raii Syn.* *284.

FOUND by Dr. Richardson among corn near Boroughbridge, and between Wetherby and Catall, in Yorkshire; also on the borders of Scotland near West Newton in Northumberland. The specimen now figured was communicated by Mr. Samuel Hailstone*, gathered, in company with Mr. James Backhouse, at Stockton, a village four miles from York, from which place it was sent to Sir James Edward Smith by Mr. Backhouse, and not from Stockton in Durham, so that the words "many other parts of the county," as quoted in *English Flora*, will apply to York-

* Erroneously called J. Hailstone in this work, under *Woodsia ilvensis*, *n.* 2616.

shire. It has also been received from James Ward, Esq. from corn-fields near Applegarth, two miles west of Richmond, in Yorkshire. Mr. Winch mentions it in fields near Benwell, Denton and Elswick, in Northumberland, and as found by Mr. R. B. Bowman at Crawcour, near Ryton in Durham, which makes it a plant of that county, although the habitat in *English Flora*, in reference to Mr. Backhouse, is erroneous. It is probably a northern or alpine plant, as it has not been noticed in the southern parts of this kingdom. A specimen is preserved in the Smithian Herbarium from the highest mountains of Switzerland, gathered by Davall, an able botanist of that country, and the deservedly esteemed friend of Smith.

This Yellow Rattle agrees with *Rhinanthus Crista galli*, *Engl. Bot. v.* 10. 657. in the fibrous roots, lanceolate, spreading, acute, sharply serrated, rough leaves; terminal, bracteated spike of flowers; and smooth, bladdery calyx. It differs in being a large plant, considerably more branched, in having narrower leaves, more dense spikes, yellowish bracteas, terminating in an elongated green point; corolla smaller; tube longer; segments of the upper lip also longer, wedge-shaped, purple; "germen narrower and more tumid; nectary heart-shaped, greenish;" seeds with scarcely any flat membranous border.

The above differences are perhaps sufficient to justify Sir James Edward Smith in supposing it to be specifically distinct from *R. Crista galli*, although it is very difficult to determine this point accurately, without minute and frequent investigations of the plant in a living state. If it should be proved to be a species, the name of *ramosissimus* would be far preferable, it being very doubtful whether the specimens published by Ehrhart, in his *Decades Herbarum Linnæi* as *R. major* are not the common *R. Crista galli*: nevertheless, as it is certainly the *R. major* of the *English Flora*, it is thought right to publish it in this work under that denomination.—E. F.

Fig. 1. represents the seed of *R. major*; fig. 2. that of *R. Crista galli*.

Chara aspera.

April 1st 1832.

CHARA aspera.

Bristly Chara.

CRYPTOGAMIA Characeæ.

GEN. CHAR. *Stem* spirally striated, articulated, bearing whorled branches. *Fructification* of two kinds; spirally striated *nucules*, and coloured *globules*.—*Greville.*

SPEC. CHAR. Stem very slender, with scattered, spreading, or deflexed bristles. Ramuli 6—8, ascending, slightly spreading, acute, jointed. Bracteas 4—5 in whorls.

SYN. C. aspera. *Willd. Act. Nat. Bot. v.* 3. 298. *Wallr. Ann. Bot.* 185. *t.* 6. *f.* 3. *Greville Crypt. Fl. v.* 6. *t.* 339.

Equisetum s. Hippuris muscosa sub aqua repens. *Plukn. Phytogr. t.* 193. *f.* 6.? *Almag. Bot.* 135.?

OUR specimens were gathered in Anglesey, in August 1831.

Stems slightly branched, erect, and densely crowded, 1—2 feet long, very flexible, with a degree of tenacity while recent; but when dry rather brittle; copiously beset with scattered, acute, slender, straight bristles, which are either spreading, or a little deflexed, and at the base of each whorl is found a row of appressed bristles, connected in pairs, each pair pointing upwards and downwards, and resembling stipules in their mode of insertion, two or three pairs of bristles being connected with each ramulus. Ramuli, in some cases, spreading, usually almost erect and incurved towards the base, with 6 joints, each joint surrounded by a whorl of 5 bracteas of the same shape and texture as the cauline bristles, the two innermost longer than the rest, all of them slightly spreading. Globules large, bright red, spherical, solitary, sessile, attached at the joints of the ramuli, exactly between the 2 longer bracteæ, and separating, at length, into 8 triangular portions, each portion

bearing on its centre a coloured column, whose summit is crowned with a tuft of annular or spirally striated, white, elastic, vermicular fibres, much interwoven with the adjoining tufts. From the centre of the whole globular mass of fibres extends another coloured column, through the pellucid coating of the globule to its point of insertion on the ramulus; and the triangular plates composing the globule are formed of tubes radiating from a common vascular centre: these are lined, on one side only, with the colouring matter which is easily displaced by pressure. A section of the stem exhibits a central tube filled with a slimy fluid mixed with granules, and an outer coating of smaller tubes (the striæ of the stem), 12—20 in number, divided at intervals by oblique partitions; and between the outer circle and the central tube is found a green parenchyma, arranged in lines alternating with the striæ, and separated, or broken transversely, at intervals, thereby giving a spotted appearance to the stem and ramuli.

Nucules[a] are not visible on Welsh specimens. We have little hesitation in connecting the plant here figured with that of Dr. Greville, and on careful examination of specimens of *C. aspera* from Prestwick Car, we observe no essential difference. *C. crinita* of Wallroth (to which some botanists are disposed to refer our Welsh plant) is said to be essentially characterized by having the bristles of the stem very much crowded and *disposed in little bundles;* its nucules also are described as evidently spiral and very long and narrow: this species has probably never yet been found in the British dominions.—W. W.

[a] The nucules of *Chara hispida* consist of an outer pellucid and membranous coat of 5 spiral striæ, terminated at the apex by a fleshy crown; beneath this is an opaque, white, brittle coating, with prominent spiral ridges, within which is a brown *indehiscent* membrane with similar spiral ridges, originating from a circular base and meeting at the apex in a point; the contents form a mass of white roundish granules which expand and float in water: they are apparently mucilaginous and of uniform consistence, and not so much like sporules as alimentary matter destined to effectuate the vegetation of the *entire nucule,* the crown of which may be regarded as an incipient whorl; the nucules remain attached to the plant long after the disappearance of the globules.—W. W.

Bryum affine.

April 1st 1832.

BRYUM affine.

Large Thyme-leaved Thread Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* terminal. *Peristome* double; *outer* of 16 teeth; *inner peristome* a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems elongated. Leaves broadly elliptical, pointed, denticulated, with thickened margins, the nerve discontinued below the apex. Capsule ovate-oblong, cernuous; lid hemispherical, apiculate.

SYN. B. affine. *Brid. Meth. Musc.* 119. *Arn. Disp. Meth. des Mousses,* 45.

Mnium affine. *Brid. Bryol. Univ.* 1. 704. *Schwægr. Suppl.* 1. *P.* 2. 134. *Mart. Bland. ex. n.* 133. *Fl. Crypt. Erlang.* 68. *t.* 2. *f.* 1. *Funck. Deutschl. Moose. t.* 33. *n.* 12. *Dill. Musc. t.* 53. *f.* 79. M. (*vide Musc. Brit. ed.* 2. 210.)

AN inhabitant of shady banks, in a sandy soil, seldom seen with fructification. Our specimen was found near Over, in Cheshire: it has also been gathered by F. K. Eagle, Esq. in a fir plantation at Mildenhall, Suffolk, "bearing fruit only in the deepest recesses of the wood, where it is much eaten by hares and rabbits."

Barren shoots creeping, with broadly elliptical leaves, narrow and rounded at the base, their small mucro-like points very much recurved. Stem two inches long, its

leaves elliptical, suddenly acuminated, spreading, light green, reticulated, the nerve discontinued just below the small acute point, which is very much recurved. Fruit-stalks several together, two inches long. Capsules oblong, cernuous, pale reddish brown, covered with a glaucous bloom.

Three times as large as *Bryum cuspidatum*, and distinguishable from that species by its apiculate lid, by the abbreviated nerve, the elliptical shape and sudden acumination of its leaves, and by its oblong narrow capsules and aggregate fruitstalks. Fruit ripe in April.

The synonyms have been kindly furnished by Professor Hooker.—W. W.

Hypnum demissum.

April 2nd 1832.

HYPNUM demissum.

Prostrate Feather Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* lateral. *Peristome* double, *outer* of 16 teeth; *inner peristome* a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

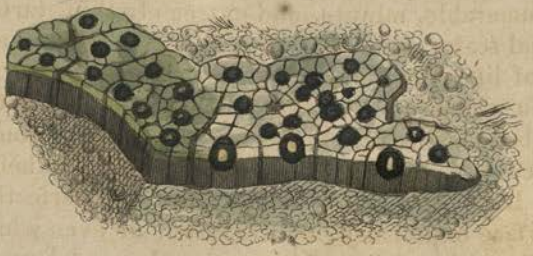
SPEC. CHAR. Stem prostrate, with a few slender branches. Leaves erect, sub-unilateral, elliptic-lanceolate, acute, nerveless, entire, the margin recurved. Capsule elliptical, cernuous; lid with a long beak.

FROM the woods of Cromagloun Mountain, near the Upper Lake of Killarney, Ireland, growing on the most inclined faces of detached rocks, in August 1829. It has since been observed near Beddgelert in North Wales.

Stems and branches quite prostrate, scarcely interwoven, very weak and slender, above an inch long, forming broad, shining, and compact flakes. Leaves shining, yellowish, slightly spreading, all pointing upwards, narrowly elliptical, nerveless, or sometimes faintly 2-nerved at the base, concave, with recurved entire margins, suddenly contracted, or pinched, below the apex. Capsule pale brown, cernuous, narrowly ovate, tapering below into the fruitstalk. Lid with a long slender beak. Fruitstalk smooth, very slender,

pale red. Perichætial leaves lanceolate, erect, nerveless, or faintly 2-nerved at the base.

A distinct and very elegant little species, remarkable for its glossy, slender habit and compact manner of growth.—W. W.



Endocarpon polystictum

April 1st 1832.

VERRUCARIA polysticta.

Many-dotted Verrucaria.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Tubercles* of a different substance from the thallus, simple, convex, not expanding, but furnished with a central pore, and inclosing a somewhat gelatinous nucleus.

SPEC. CHAR. Scales minute, tartareous, very thin, crowded, angular, even, whitish, upon a thick black continuous substratum. Tubercles minute, immersed, at length slightly emerging, flattish above; shell black throughout; pore obsolete.

HITHERTO, to the best of our knowledge, undescribed, but not uncommon on walls, whether of brick or flint, growing chiefly, but not exclusively, on the mortar. It occurs also occasionally on sand-stone, and on large flints on the downs of Sussex.

Thallus in irregular patches, often two or three inches or more in length, composed of a black substratum varying in thickness, but scarcely exceeding a quarter of a line, and innumerable, minute, and extremely thin, tartareous, superficial scales, generally so crowded as to form an even surface of little angular areolæ, separated by very narrow cracks, in which, as well as at the edges of the patch, the black substratum is visible. These areolæ are sometimes slightly convex, sometimes rather concave from their edges being a little raised, but more generally perfectly flat; their surface unpolished, ash-coloured, or even white, but frequently with a tinge of brown, unchanged by moisture in dried specimens, but in the recent Lichen of a dull green when wet; the colour of their internal substance, when they are thick enough to admit of its investigation, is pale green; that of the substratum, which appears of rather a loose texture, is dull black. Within this black substance

are formed the tubercles, which are numerous, regularly scattered, a small portion only of their upper part emerging, sometimes several in the same areola, sometimes only one; the exposed part is a mere point to the naked eye, sometimes polished, sometimes not so, most frequently regularly convex, sometimes slightly dimpled, occasionally marked with a most minute dot at the centre, and not rarely of a brownish hue in that part: the shell is thick and black, as well in the immersed as in the protuberant portion, and incloses a minute whitish nucleus.

Owing to the uninterrupted and even mode of growth, this *Verrucaria* differs much in habit both from *V. tephroides*, *t.* 2013, and from *V. fuscella*, *t.* 1500; yet so nearly is it allied to the latter that it is now proposed as distinct with considerable hesitation. *V. fuscella* is distinguished, however, not only by the thicker, pulvinate, variously tumid, and often deeply fissured thallus, but more essentially by the structure of the tubercles, which are much more minute, and have the brown solid nucleus enveloped, in the immersed portion, only in a thin pellicle of their own colour, and not inclosed in every part in a thick black shell. It is by this mark that Acharius distinguished his *V. glaucina* from *V. fuscella*, regarding the latter as an *Endocarpon**; and *V. polysticta* might hence be supposed his *V. glaucina*, a plant known to him only from British specimens communicated by Mr. Harriman, were not the thallus of that Lichen described as "sordidè albicans" within. But the whole description of *V. glaucina* agrees well with old effuse specimens of *V. plumbea* (*Lichen plumbosus* of *Engl. Bot.* 2540,) such as we also long ago received, unnamed, from Mr. Harriman.

There is a Lichen, probably undescribed, although common on pebbles on the sea-shore, and found occasionally on brick walls, which is scarcely distinguishable from *V. polysticta* by the naked eye: as, however, the production in question is a *Lecidea*, (or *Gyalecta* of Acharius,) it is unnecessary to point out any less decisive difference.—W.B.

* In the *Syn. Lich. p.* 99. it is united with *V. polythecia* of the *Lich. Univ.* as a variety of *E. tephroides*.

FRAGARIA vesca β. *atrovirens*.

Simon-burn Strawberry.

Syn. Fr. calycina. *Lindley, Synopsis of the British Flora, p.* 96, not of Loiseleur.

THE first knowledge I had of this plant was from specimens sent to the Horticultural Society by Sir Charles Monck, under the name of the Simon-burn Strawberry. It appears to have been originally noticed by Wallis, who, in his *History of Northumberland*, vol. i. p. 145, speaks of it thus:—

"14. Large, Mountain Strawberry, with shining rugose leaves, in the bottom of the wood at the ostium of Goston-burn, on the north side. On the strand of the brook at Slaterfield by the path to Simon-burn. The fruit is conic, of the size of a small nutmeg, finer-tasted than the garden kinds. It loves a water sand and gravel, and a low shady situation. It is a variety of the small, rough, shining-leaved, common strawberry of the woods."

As in cultivation it proved to have more cuneate and much deeper green leaves than the Common Wood Strawberry, and to have quite another aspect when growing in masses, I was led to regard it as a distinct species, and to refer it to the *F. calycina* of Loiseleur, a supposed species found in the neighbourhood of Paris. It is, however, probable that it is a mere variety of *F. vesca*, and I am now convinced that it is at least different from *F. calycina*, whatever that may be. The short diagnoses in DeCandolle's *Prodromus*, and such other works as I had consulted when the *Synopsis* was printed, were so much in accordance with

the Northumbrian plant, that I did not suspect any error in the reference; but, upon looking more carefully into the original authority, I find that the true *F. calycina* has a shorter flower-stalk, larger flowers, and a calyx much more developed than in the subject of the present plate.

This, like the Common Wood (*F. vesca*, *t.* 1524.) and the Alpine Strawberries, varies with white and red fruit. The white-fruited variety is called the Simon-burn Strawberry, and has the most claim to rank as a species; it is this only that I had in view when the *Synopsis* was published; the red-fruited, or Gofton-burn Strawberry, is a more luxuriant and larger plant, with from three to five flowers in an umbel, and its leaves are much more pointed.—J. L.

Fig. 1, a flower of the Simon-burn variety, slightly magnified; fig. 2, a flower of the Gofton-burn variety, also magnified, showing a variation in the calyx which is not unfrequent.

June 1st 1832.

JUNIPERUS nana.

Dwarf Juniper.

DIŒCIA Monadelphia.

GEN. CHAR. Barren flower: *Scales* of the *catkin* sub-peltate. *Perianth* none. *Stamens* 4—8, 1-celled. Fertile flower: *Scales* of the *catkin* few, united, at length fleshy and surrounding the 3-seeded berry.—*Hooker, Br. Fl. v.* 1. 438.

SPEC. CHAR. Leaves 3 in a whorl, lanceolate, imbricated, shorter than the oval berry; fertile flowers oblong; stem recumbent.

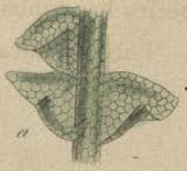
SYN. J. nana. *Willd. Sp. Pl. v.* 4. 854. *Sm. Eng. Fl. v.* 4. 252. *Sprengel, Syst. Veget. v.* 3. 909.
J. communis γ. *Linn. Sp. Pl.* 1470.
J. communis β. *Wahl. Lapp.* 276. *Hook. Brit. Fl.* 439.
J. alpina. *Raii Syn.* 444.

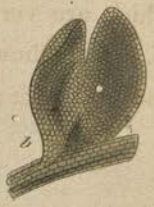
FROM Glyder Fawr mountain, North Wales, in June 1828.

A low spreading shrub, with leaves not half so long as in *J. communis*, and proportionally broader, less spreading and more crowded. Stamens usually four, attached at the external base of each scale of the barren catkin; pistilla 3—4, ovate, gibbous at the base, slightly triangular, bluntly keeled; style hollow, ovulum seated at the bottom of the germen, erect, roundish oblong; berries often longer than the adjoining leaves.

Perhaps not essentially distinct from *J. communis*; but in that species we find the ovulum oblate, and the fertile flowers oval or roundish.

It is difficult to refer the fertile flowers of *Juniperus* to those which are termed amentaceous: to us they appear to be solitary, consisting of four series of ovate-pointed scales (calyx?), inclosing a bell-shaped corolla, deeply divided into three roundish, acute, or toothed segments, which at length become enlarged and coherent at their reflexed summits, forming the fleshy berry, with the calyx below, in general, remaining unaltered.—W. W.





Jungermannia turbinata.

June 1st 1832.

JUNGERMANNIA turbinata.

Pear-shaped Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Common receptacle of the fruit none. *Perianth* or *calyx* monophyllous, tubular (rarely wanting). *Caps.* 4-valved, terminating a peduncle which is longer than the perianth.—*Hooker.*

SPEC. CHAR. Without stipules. Stem creeping, scarcely branched. Leaves plane, spreading, or reflexed, subquadrangular, deeply and acutely notched, the segments acute, triangular. Fruit terminal. Calyx turbinate, plicate above, the mouth contracted, toothed. Perichætial leaves spreading, larger than the rest.

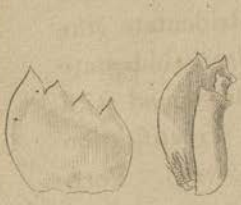
SYN. J. turbinata. *Hooker in Br. Fl. v. 2. P. 1. 111.* (under the name of *J. affinis,* corrected at p. 128 of the same work.)

A VERY distinct species, abundant on moist shady declivities in marly and limestone districts: our specimens are from Cotteral Wood, Cheshire, March 1828.

It is a smaller plant than *J. inflata,* remarkable for its pallid hue, and for the large and conspicuous reticulation of its foliage. Leaves two-ranked, not at all concave, generally reflexed, especially those of the perichætium, which are very different from the perichætial leaves of *J. inflata,* though that species has probably been often confounded with our plant. The fructification is abundant in

early spring, and the calyces are always fertile. Perigonial leaves, fig. *a.* on separate shoots, crowded, concave, sometimes 3-toothed, the anterior segment inflexed, and forming an auricle for the lodgment of the anthers.

J. inflata has the leaves, fig. *b.* of a roundish form, concave, deeply bifid, the segments obtuse or parabolic: though larger than those of *J. turbinata*, they are composed of an exceedingly minute reticulation, and we have always found the perichætial leaves much smaller than the rest, erect and appressed: the stems, too, are usually upright, though the plant is liable to vary in its mode of growth. It is admirably figured and well described in Dr. Hooker's excellent monograph.—W. W.



Jungermannia exsecta.

June 1st 1832.

JUNGERMANNIA exsecta.

Obliquely-cut Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. *Common receptacle* of the fruit none. *Perianth* or *calyx* monophyllous, tubular (rarely wanting). *Capsule* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Stem procumbent. Leaves recurved, broadly ovate, with incurved margins, unequally 2-lobed, the lobes obscurely conduplicate, broadly ovate, acute; posterior lobe largest, often bidentate at the apex; anterior lobe dentiform, inflexed. Fructification terminal. Calyx fringed at the mouth.

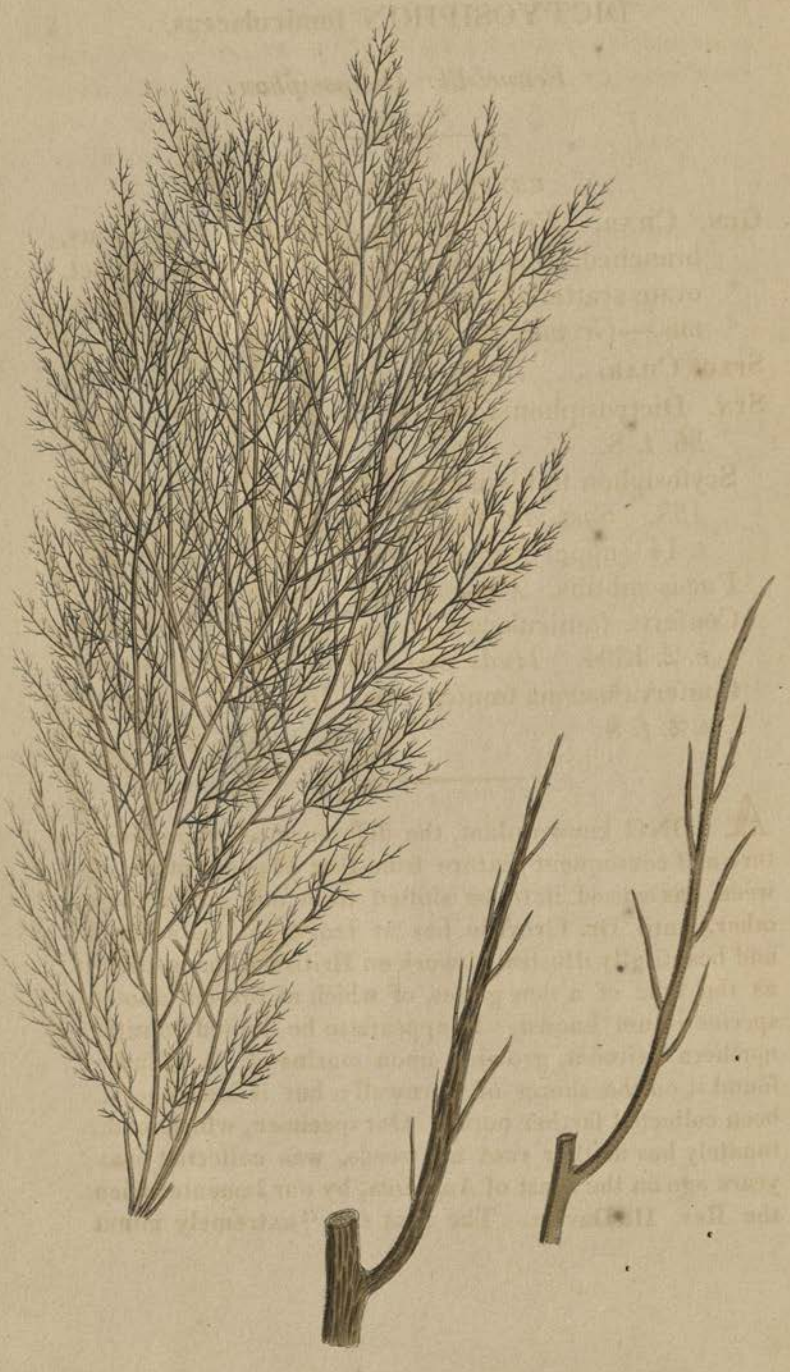
SYN. Jungermannia exsecta. *Schmid. Ic.* 241. *t.* 62. *f.* 2. *Web. & Mohr, Fl. Cr. Germ.* 428. *Hook. Brit. Jung. t.* 19.

OUR specimens were obtained on the borders of Delamere Forest in Cheshire; found in dry shady situations, May, 1831.

It forms extended patches of a pleasant yellowish green colour; the stems, for the most part, unbranched, those producing the fructification larger than the rest. Leaves two-ranked, with dotted reticulation, bi-tridentate (the gemmiferous ones erose, and very often distinctly bidentate at the apex of the posterior lobe, so as to correspond with the descriptions of Schmidel and of Mohr). Fructification terminal (abortive, so far as we have observed). Peri-

chætial leaves broader than the rest, sometimes regularly 4-toothed, more frequently 3-toothed; their figure, when expanded, orbicular and obliquely truncate, the teeth of equal size, with reflexed margins, very like those of *J. incisa*. Abortive pistilla surrounded by a calyx, which is very short, and fringed with numerous laciniæ half its own length; the whole calyx shorter than the pistilla. Gemmæ consisting of large angular grains, collected into reddish clusters at the apex of the larger segments of the leaves which terminate the barren stem.

The specific name of this plant is singularly applicable; for the leaves are of nearly the same shape as if, from being originally roundish-ovate, a semicircular portion had been cut out from one side above the middle, and the residue bent inwards at the sides.—W. W.



Dictyosiphon fœniculaceus.

June 1st 1832.

DICTYOSIPHON fœniculaceus.

Fennel-like Dictyosiphon.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* filiform, tubular, continuous, branched. *Root* minutely scutate, naked. *Fruct.* ovate scattered seeds, lying beneath the epidermis.—*Greville.*

SPEC. CHAR. . . . . .

SYN. Dictyosiphon fœniculaceus. *Grev. Algæ Brit.* 56. *t.* 8.

Scytosiphon fœniculaceus. *Agardh, Sp. Alg. v.* 1. 163. *Syst. Alg.* 258. *Lyngb. Hydr. Dan.* 63. *t.* 14. (upper fig.) *Sprengel, Sp. Pl. v.* 4. 328.

Fucus subtilis. *Turner, Hist. Fuc. f.* 234.

Conferva fœniculacea. *Linn. Syst. Nat. ed. Gmel. v.* 2. 1394. *Huds.* 594. *With. v.* 4. 130.

Conferva marina fœniculacea. *Dill. Hist. Musc.* 16. *t.* 2. *f.* 8.

A LONG known plant, the difference of whose structure and consequent texture from that of every other seaweed, has caused it to be shifted from one genus to another, until Dr. Greville has at length, in his scientific and beautifully illustrated work on British Algæ, settled it as the type of a new genus, of which at present another species is not known. It appears to be limited to rather northern latitudes, growing upon marine *Algæ*. Hudson found it on the shores of Cornwall; but it has generally been collected farther north. Our specimen, which unfortunately has neither root nor seeds, was collected many years ago on the coast of Anglesea, by our lamented friend the Rev. H. Davies. The root (an "extremely minute

disk") throws up several fronds composed of capillary branches, sometimes above two feet long, and united at the base to a short thick stem. The principal branches not much thicker than a bristle; the second set of branches smaller than the first, irregularly placed at moderate intervals all along them, sometimes two or three near together or on one side; a third set of branches is smaller and proportionally much shorter than the second, upon which it is arranged in a similar way; all these branches are rather suddenly bent at their commencement, and taper very gradually to fine points. Thus far the ramification is found to proceed in ordinary specimens, or such as, having been tossed about among the rejectamenta of the sea, are much worn; and such is the figure in the *Historia Fucorum*. In perfect specimens the third set of branches is clothed with ramuli, which are about one half or one quarter of an inch long, tapering slightly at both extremities, and throwing out from their sides and ends minute, jointed, viscid fibres that adhere to paper when dried upon it, which the rest of the plant hardly does. The first sets of branches differ but slightly in diameter; they are cylindrical, and of a texture approaching to coriaceous. They consist of a tubular membrane, formed of articulated hollow fibres so connected as to give it a reticulated appearance, (whence the generic name,) inclosing a cellular tissue. The fibres of which this membrane is formed, when divided in the ultimate ramuli, produce the viscid fringe above mentioned. The seeds are described by Dr. Greville as "ovate, scattered, slightly imbedded in the substance of the frond." The colour of the plant changes but little in drying; it is a brownish olive green, varying a little in intensity.

It may always be distinguished from *Dichloria* (*Fucus*) *viridis*, by the scattered arrangement of its branches, that plant having them regularly pinnate.—J. D. C. S.

James McNab del.t

August 1st 1832.

PINGUICULA alpina.

Alpine Butterwort.

DIANDRIA Monogynia.

GEN. CHAR. *Calyx* bilabiate, 5-fid. *Corolla* ringent, spurred. *Capsule* unilocular.

SPEC. CHAR. Spur conical, slightly curved, shorter than the segments of the corolla; lower lip retuse. Capsule conical. Scape nearly smooth.

SYN. Pinguicula alpina. *Linn. Fl. Suec. ed.* 2. 9. *Sp. Pl. ed.* 2. *v.* 1. 25. *Fl. Dan. t.* 453. *Crantz, Stirp. Austr. ed.* 2. 288. *Willd. Sp. Pl. v.* 1. 111. *Suter, Fl. Helv. v.* 1. 12. *Vahl, Enum. v.* 1. 193. *Hort. Kew. v.* 1. 45. *Rœm. et Schultes, Syst. Veget. v.* 1. 191. *Wahl. Fl. Suec.* 13. *Sprengel, Syst. Veg. v.* 1. 48. *Benth. Cat. Plant. Pyren.* 111.

P. nectario conico, petalo breviore. *Linn. Fl. Lapp. ed. Smith,* 11. *t.* 12. *f.* 3. *Scop. Fl. Carn.* 474.

P. purpurea. *Vahl, Enum. v.* 1. 193.

P. alpestris. *Pers. Syn. Pl. v.* 1. 18.

P. flavescens. *Schrad. Fl. Germ. v.* 1. 53.

THIS plant was picked by the Rev. George Gordon, Elgin, in June, 1831, in the bogs of Auchterflow and Shannon, on the Rose Haugh property, Ross-shire. Specimens sent by Mr. Gordon to Mr. Hewett Watson, were immediately recognised by him as the true *P. alpina* of the Continent. I understand there are two specimens in the herbarium of Sir J. E. Smith, upon the same paper with *P. lusitanica*, marked as sent to him by Mr. James Mackay, in September 1794, from the island of Skye.

Leaves oblong, involute, more transparent than in *P. vulgaris*, but less than in *P. lusitanica*, and having occasionally a purplish tinge. Scape (2—4 inches high) nearly smooth, shining. Calyx bilabiate, glabrous; upper lip of three teeth; lower lip emarginate; both afterwards more deeply divided; corolla yellow, rather larger than in *P. lusitanica*, bilabiate, tube on the inside striated with green; upper lip notched; lower retuse, larger, and more prominent than the other, covered within at the base with erect, coarse, yellowish, jointed hairs; spur conical, shorter than the segments of the corolla. Stamens included; filaments stout, glabrous, somewhat twisted and bent; anthers nearly round, yellow, opening by a line across their upper surface. Pistil included; germen green and subglobular, slightly glanduloso-pubescent; style colourless, flattened, glabrous; stigma bilabiate, segments large, revolute, fringed, pubescent on the outside, the lower lip covering the anthers.

The specimen here figured was received from my friend Mr. Stables, who, having accompanied Mr. Gordon to the spot, on the 19th of April, found the plant coming into flower. It has since expanded at the Botanic Garden under a shaded cold frame.

Some confusion regarding this species may arise from Persoon adopting the specific name of *P. alpestris*; while under *P. alpina*, as a distinct plant, he refers to *Eng. Bot. t.* 145, which is an exceeding good figure of *P. lusitanica*, from which species indeed he also refers to the same Plate.

R. Graham, M.D.

Edinburgh, May 28th, 1832.

Fig. 1, corolla; 2, section of the same; 3, calyx, and anther, the latter covered by the lower lip of the stigma; 4, capsule crowned by the style and fringed stigma; 5, anther; 6, jointed pubescence from the inside of the lower lip :—all more or less magnified, except fig. 1.

SILENE patens.

Spreading Catch-fly.

DECANDRIA Trigynia.

GEN. CHAR. *Cal.* swelling, of one leaf. *Petals* 5, with claws. *Caps.* superior three-celled, bursting at the summit. *Seeds* many.

SPEC. CHAR. Petals deeply obcordate, naked, with broad, wedge-shaped segments. Calyx clavate. Stamens scarcely exserted. Panicle drooping, clammy.

SYN. Cucubalus viscosus. *Huds.* 163. *ed.* 2. 186. *excluding the synonyms.*

THIS plant I found at Dover in 1825; and as its characters remain unchanged by cultivation, few will question the propriety of separating it from *Silene nutans*, with which it appears to have been hitherto confounded. Both species occur at that place; for the *S. nutans*, which is very accurately described by Ray, is mentioned by him as growing at Dover, and my late worthy friend Mr. T. F. Forster collected it there some years ago. It seems also probable that the present species has given rise to the idea of the *S. paradoxa* being an English plant. The absence of the coronary appendages from the petals, with their broad, wedge-shaped, less deeply parted segments, and the much longer calyx, essentially distinguish it from the *S. nutans*, and in my opinion justly entitle it to a place in *English Botany*. The colour of the flowers resembles that of *S. li-*

vida, regarded by DeCandolle as a mere variety of *nutans*, with which it agrees in the presence of a crown.

Plant perennial, cæspitose, downy. Stems ascending, cylindrical, branched, about two feet high. Leaves, the radical and those of the lower part of the stem, spathulate, with a short point, on rather long channelled footstalks; upper ones sessile, linear, lanceolate, acute, with the margins slightly waved; the under side rather paler, and marked with three or five ribs. Flowers white, slightly drooping, in a loose spreading panicle. Peduncles long, filiform, viscid. Calyx nearly an inch long, clavate, ten-ribbed, pubescent; the teeth ovate-oblong, blunt, with a white membranous border. Petals destitute of a crown, wedge-shaped, parted about half way, or deeply cordate, with broad obtuse segments; veiny and livid on the under side, pure white above. Claws long, linear, attenuated towards the base. Stamens ten, unequal, seldom projecting beyond the tube. Filaments slender, white. Anthers yellow. Germen cylindrical, green, sitting on an elevated column, into the top of which the stamens are inserted. Styles three, slender, compressed, about an inch long. Stigmas downy, their points purple and recurved. Capsule conical, surrounded by the persistent calyx.

WILLIAM PEETE.

Dartford, May, 1832.

2740.
1372*

SALIX laxiflora.

Loose-flowered Willow.

GEN. CHAR. Male: *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female: *Cal.* and *Nect.* as in the male. *Cor.* none. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Upright. Young shoots slightly pubescent. Leaves naked, flat, broadly obovate, narrowed to the base, slightly toothed, glaucescent beneath; upper ones acute. Stipules small, concave. Catkin loose. Germen stalked, bluntish, naked in the lower part. Style as long as the linear divided stigmas.

OBSERVED in 1810 at Killin in Breadalbane; but previously distinguished by the late Mr. G. Anderson, who communicated the plant from which our specimens have been taken, without informing us in what part of Britain he had found it. It forms at this time a tree-like shrub, more than 12 feet high, with crooked divaricated branches, flowering in April.

Twigs shining, greenish grey, or slightly tinged with brown; at first sparingly and inconspicuously pubescent. Leaves 1 inch to 1¼ inch long, bright green and shining above, more or less glaucous beneath; their substance thin; their edges flat, or most slightly revolute, with minute glandular teeth in shallow crenatures, which are mostly few, often entirely wanting. The lower leaves are rounded upwards, with or without a small point; the upper ones

more pointed, and frequently so widened above the middle as to be somewhat rhomboidal, free from pubescence in every stage of growth, except on the upper side of the leaf-stalk. On strong young shoots the leaves grow twice as large, and take an elliptic-oblong outline, with rather stronger serratures. Stipules small, ovate or half-cordate, mostly concave, the edges and disk glandulose. Catkins about an inch long when in flower, on thick, hairy stalks, with a few small ovate, or rounder, slightly serrulate, bluntish, reflexed floral leaves, naked and shining above, and silky beneath, which soon fall off. Flowers loosely set. Calyx-scale oblong, concave, mostly rounded, silky; the upper half black. Nectary interior, short, linear, truncate, pale. Germen rounded and bulging at the base, contracted in the middle, and again rather enlarged towards the somewhat blunt apex; the lower part naked, green, the upper beset with white appressed shining hairs; its stalk about half as long as the calyx-scale, and twice the length of the nectary, naked, or more or less hairy, and often varying in this respect in the same catkin. Style half as long as the germen, naked. Stigmas scarcely so long as the style, deeply cleft into spreading linear segments, pale, soon turning brown. Male plant unknown.

This Willow resembles *S. laurina* (the *S. bicolor* of *English Botany* and of *Salictum Woburnense*,) in the figure of the leaves; but that plant differs by its more acute-angled ramification; its mahogany-coloured twigs, densely cottony while young; the abundance of short appressed hairs on both surfaces of the young leaves; the more subulate germen, white all over with cottony hairs; and the shorter style, with short stigmas, the segments of which usually adhere together.—W. B.

2750.

1883.

Jungermannia hibernica.

August 1st 1832.

JUNGERMANNIA hibernica.

Irish Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. *Common receptacle* of the fruit none. *Perianth* or *calyx* monophyllous, tubular, (rarely wanting). *Caps.* 4-valved, terminating a peduncle which is longer than the perianth.—*Hooker.*

SPEC. CHAR. Frond dichotomous, ribbed, the margin membranous, crisped, entire. Fruit from the upper surface of the frond. Calyx double; exterior very short, laciniated; interior much exserted, ovate-oblong, subplicate. Calyptra much shorter than the interior calyx.

SYN. Jungermannia hibernica. *Hook. Brit. Jung. t.* 78. *and Supplem. t.* 4. *f.* 1—6. *Hook. & Tayl. Musc. Brit. ed.* 2. 241.

OUR specimens were gathered at Aberffraw in Anglesea, April 1829, growing in moist sandy places near the shore.

This species forms flat, circular, light green patches, two or three inches in diameter. Frond dicœcious, procumbent, subdivided in a dichotomous manner, variable in shape, the divisions sometimes very narrow with the margins erect and much crisped, in other instances broadly obovate and flattened, frequently beset with erect lamellar processes disposed in radii towards the extremity of the frond; these seem to be a luxuriant transformation of the perigonial scales, and not a characteristic of the species, occurring only in plants which have abortive fructification. The nerve is much thickened in the middle, but not otherwise different in structure from the rest of the frond, covered underneath with numerous simply fibrous roots. Perigonial scales purplish, erect, (nearly at a right angle with the frond,) toothed, crowded and often covering the nerve, coalescing into the resemblance of a honeycomb, in whose

cells are lodged the pale buff, solitary, roundish and nearly sessile anthers. Calyx double, the outer one deeply laciniated, with lamellæ attached to the principal segments; inner calyx much larger, oblong, slightly compressed, the mouth scarcely contracted and obscurely toothed. Calyptra about half as long as the inner calyx, never exserted in our specimens. Capsule clavate-oblong, deep chocolate colour, dull on the surface, separating into only 2 valves, unless forcibly divided, when a 4-valved structure becomes apparent, as in other species. Seeds at first clustered, four together, adhering to the sides of the spiral filaments; at length loose, globular, dark reddish brown, slightly granulated. Spiral filaments composed of a double helix in a pellucid tube tapering at each end, soon falling after expansion of the capsule. In an early stage the inner calyx is extremely short, not equalling the length of the pistilla.

The specimens figured in Dr. Hooker's *Monograph* have evidently been drawn up among moss, and the perigonial scales are in consequence much less copious and of a paler colour than in ours, but we can discern no essential difference. We are also persuaded that the distinctions pointed out in that admirable work, between this species and *J. Lyellii*, will prove to be well founded, though we have not yet had an opportunity of comparing authentic specimens: the ramification of the frond in *J. Lyellii* appears to be quite different; the strong fibrous nerve is also remarkable, and the exserted calyptra is a striking peculiarity; but our specimens prove that no dependence can be placed on the perigonial scales in distinguishing these closely allied species.

W. W.

Fig. 1 and 2, The plant, natural size; 3, ditto, slightly magnified; 4, a portion showing the calyx; 5, ditto, showing the transverse section; 6, section of the inner calyx, showing the calyptra; 7, outer calyx; 8, capsule; 9, section of a valve of the capsule, highly magnified; 10, the unripe seeds and filaments; 11, ripe ditto; 12, magnified view of the male fructification; 13, a longitudinal and vertical section of the male frond; 14, male frond, natural size; 15, a frond with vertical lamellæ; 16, magnified section of ditto.

Jungermannia pubescens.

August 1st 1832.

JUNGERMANNIA pubescens.

Downy Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. *Common receptacle* of the fruit none. *Perianth* or *calyx* monophyllous, tubular, (rarely wanting). *Caps.* 4-valved, terminating a peduncle which is longer than the perianth.

SPEC. CHAR. Frond alternately branched, the segments linear, obtuse, strongly ribbed, membranaceous, pubescent on both sides. Fructification dorsal, attached to the rib. Calyx ob-reniform, concave.

SYN. Jungermannia pubescens. *Web. & Mohr. Fl. Crypt. Germ.* 435. *Hook. Brit. Jungerm. t.* 73. *Hook. & Tayl. Musc. Brit. ed.* 2. 241.

FOUND on shady limestone rocks near Buxton, Derbyshire, May 1831, interspersed among mosses; sometimes in dense tufts.

Of hoary aspect, soft and flexible. Frond oblong, once or twice divided; the branches irregular, alternate, not dichotomous, obtuse, with a strong prominent rib, thicker than in *J. furcata*; the membranous pagina wavy, minutely reticulated, everywhere pubescent, never reflexed at the margin. Calycine scales ob-reniform, pubescent within and externally, attached at their lower end, the lobes concave, almost conduplicate; pistilla (abortive in all our specimens,) 4—8 in number, arranged in two rows, and stand-

55413

ing out from the short thick nerve of the calyx. Perigonial scales resembling bladders, inclosing several roundish anthers, attached to the circumambient nerve. The pubescence of the frond consists of very short hairs inserted between the cellules.

We think it essentially distinct from *J. furcata*, because in that species we observe the frond to be *truly dichotomous*, or repeatedly forked; the branches fewer, more distant, with the margins usually recurved; the cellules much larger, and the beautiful reticulation which they form regularly hexagonal, and for the most part destitute of pubescence, except at the margin and on the rib beneath; the marginal cilia (sometimes altogether wanting,) consist of long recurved hairs connected in divaricating pairs, and very different from those of *J. pubescens*.

W. W.

October 1st 1832.

CROCUS speciosus.

Showy Autumnal Crocus.

TRIANDRIA Monogynia.

GEN. CHAR. *Cor.* in 6 divisions, regular. *Stigmas* convoluted.

SPEC. CHAR. Stigma erect, in three deeply laciniated segments, longer than the stamens; flowers earlier than the leaves.

SYN. Crocus speciosus. "*Marsch. Casp.* 129. *App. n.*4." *Bieberst. Fl. Taur.-Caucasic.* 27. *Ejusd.* "*Cent. Pl. Rem. Ross. v.*2. *t.*71." *Rœm. & Sch. Syst. Veget. v.* 1. *Mant.* 277.

LONG since naturalized in a meadow near Warrington; our specimen, with leaves, was gathered there in March 1831. The flowers appear in September.

Although this Crocus is generally believed to be but a variety of *C. nudiflorus*, a figure will perhaps be acceptable to the majority of our readers. It is only in the relative length of the style that we find any mark by which to distinguish it: the bulbs send out long scaly runners, and the coating (or remains of the sheathing bases of the leaves of a former season,) has numerous parallel ribs; the leaves have a flattened keel with blunt angles, and have two ribs on each side of the keel, exactly as in *C. nudiflorus*. The coating of the bulbs, being the *mere exuviæ* in a state of

absolute decay, are liable to much variation of appearance at different seasons of the year, which will account for any supposed disparity between this plant and *C. nudiflorus*, and will also show the fallacy of any specific character thence derived. The synonyms are given by Dr. Hooker.

W. W.

2753.

1381*

October 1st 1832.

SALIX procumbens.

Oval rigid-leaved Willow.

DIŒCIA Diandria.

GEN. CHAR. Male: *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female: *Cal.* and *Nect.* as in the male. *Cor.* none. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Branches diverging. Leaves oval, minutely serrated, recurved, bright green and shining on both sides. Catkins elongated, thick, cylindrical. Germen nearly sessile, tapering, obsoletely quadrangular. Style short, deeply cloven. Stigmas spreading, bifid.

SYN. Salix procumbens. *Salict. Woburn.* 121. *t.* 61. (not good). *Hook. Brit. Fl. ed.* 2. 429.
S. lævis. *Hook. Brit. Fl. ed.* 1. 432.
S. retusa. *With. ed.* 4. *v.* 2. 49. with figure.

DRAWN from cultivated specimens communicated by N. J. Winch, Esq., who found the plant in the mountains of Breadalbane, where it had previously been gathered by the late excellent Dr. Stuart of Luss. We learn from the *British Flora* that it has been observed also in the Cairn Gorm range.

A bushy shrub, with diverging procumbent branches: but old plants rise in our gardens to the height of two or three feet. Twigs stout, straight, brownish, hairy when young, naked and shining the second year. Leaves on very short, dilated, channeled, smooth stalks, oval, or somewhat oblong, sometimes almost cordate, of a thin, rigid texture, bluntly carinate, curved downward towards the point, which is by no means acuminate; the edges in the living plant flat, not recurved, regularly-serrated throughout with minute glandular teeth; both surfaces remarkably even and shining, the upper grass-green, the under somewhat paler;

usually naked, but sometimes shaggy with silky hairs, especially beneath. In drying, the veins become prominent on both sides, and the edges of the leaves slightly rolled back. Stipules mostly shorter than the leaf-stalk, nearly ovate, flat; the edges serrated with glandular teeth; the disk without glands, except two or three at the very base. Catkins upright, stout, cylindrical, obtuse, about two inches long, on hairy stalks of somewhat less, in general, than their own length, furnished with 4—6 leaves similar to those on the branches. Flowers closely set. Calyx-scale nearly black, oval, rounded, very silky. Germen on a stalk shorter than the calyx-scale, rounded at the base, tapering upwards, obsoletely quadrangular, covered more or less densely with silky hairs. Style short, cleft sometimes almost to the base, so as to form footstalks to the thickish, bifid, spreading stigmas, which are reddish with a tinge of yellow, soon turning brown. The male plant has not come under our notice.

It would be necessary to inspect the specimens preserved in Lightfoot's herbarium, to ascertain whether the plant found by Dr. Stuart in the mountains of Glen Co (see *Engl. Bot.* 1360,) was this species, of which we have specimens from him as *S. myrsinites* from Breadalbane, or whether it was really the *S. myrsinites* of *Engl. Bot.* Should it prove the former, we have no good authority to regard the *Engl. Bot.* plant as a British native, nor do we know its origin. It differs from *S. procumbens* by its smaller, rounder, more conspicuously serrated leaves; shorter, almost ovate catkins; shorter, more truncate, and paler calyx-scales, and more distinctly quadrangular germen. From the remarkable primâ facie resemblance of its leaves to those of *Betula nana*, Mr. Forster has suggested for it the name of *S. betulifolia.*

The true *S. myrsinites* of Linnæus appears to be *S. arbutifolia* of Willdenow, *S. myrsinites* β of Smith. This has, like *S. betulifolia*, short catkins and distinctly serrated leaves; but these are more acute and of an ovate-lanceolate figure, and the long style seems to afford a distinctive character. It occurs in various Scottish mountains. *S. Macnabiana* of Macgillivray, in *Jameson's Edinburgh Journal* for October 1830, is probably to be referred to it.— W. B.

Ulva crispa?

October 1st 1832.

ULVA crispa.

Crisp Ground Ulva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* membranaceous, green, plane, sometimes saccate and inflated in the young state. *Fructification* minute granules mostly arranged in fours.

SPEC. CHAR. Fronds crowded, deep green, rounded, inflated, much wrinkled and folded.

SYN. Ulva crispa. *Lightf. Fl. Scot.* 972. *Fl. Dan.* 1840. *f.* 1. *Agardh, Syst. Alg.* 190. *Spec. Alg. v.* 1. 416. *Grev. Brit. Alg.* 175.

U. terrestris tenerrima viridis crispa. *Raii Syn.* 64.

U. terrestris. *Lyngb. Hyd. Dan. t.* 6. E.

U. lactuca γ. *Huds. Fl. Angl.* 567.

Tremella terrestris tenera crispa. *Dill. Hist. Musc. t.* 10. *f.* 12. A. B. C. D.

GROWING on moist shady ground, thatched roofs, etc. in winter and spring. Fronds very much crowded, forming a dense stratum about an inch in thickness, loosely attached to the soil. Each plant is rounded, very thin and tender, but not gelatinous, of a deep green, changing to a dull yellow green in drying, much crisped and folded. Under a good lens it is seen to be most beautifully and neatly divided into different square plots separated by parallel pellucid lines, and these again into squares, consisting each of four square granules; thus forming a triple arrangement of squares, compared by Agardh to the parterres of a garden. Agardh suspects that *U. furfuracea*, figured by Dr. Greville both in

the *Scottish Cryptogamic Flora* and in *British Algæ*, is only the young state of *U. crispa*; but this is not confirmed by observation, for it never exceeds a line in length. The specimens figured were communicated by Mr. Borrer. It is said to be a common plant; but it is certainly local, as there are many parts of England in which it does not occur. —Rev. M. J. Berkeley.

Ulva Linza?

October 1st 1832.

ULVA Linza.

Lanceolate Ulva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* membranaceous, green, plane, sometimes saccate and inflated in the young state. *Fructification* minute granules mostly arranged in fours.

SPEC. CHAR. Frond linear-lanceolate, attenuate at each end, extremely waved at the margin and consisting of a double membrane.

SYN. Ulva Linza. *Huds. Fl. Angl.* 568. *Linn. Sp. Pl.* 1633. *Agardh, Sp. Alg. v.* 1. 412. *Lightf. Fl. Scot.* 973. *Fl. Dan. t.* 889. *Grev. Brit. Alg.* 173.

Solenia Linza. *Agardh, Syst. Alg.* 185.

Tremella marina fasciata. *Dill. t.* 9. *f.* 6. *& f.* 5.

Tremella marina Porrifolio (Ulva lanceolata, *Linn.*).

ATTACHED to stones in salt water. Frond linear-lanceolate, membranous, of a full green, fading in age, six to eighteen inches or more in length, the base very fine and threadlike, often giving off a single branch; the frond soon expands till it is from two to even five inches broad, and then again becomes attenuated, the margin beautifully waved and curled. Below, the frond is tubular; but the sides of the tube soon collapse, and form a flat frond consisting evidently of two closely connected membranes. Sometimes air-bubbles are formed within the plant, and effect a partial disunion of the membranes. The whole

frond is regularly reticulated in squares, which run in right lines, each reticulation containing from one to four round granules. In drying, it adheres incompletely to paper.

I quite agree with Dr. Greville in retaining this plant in the genus *Ulva*, and considering it as a most distinct species. It forms a most beautiful transition between the two genera *Ulva* and *Enteromorpha*, agreeing perfectly in character with neither, but in habit and fructification most nearly allied to *Ulva*. The specimens from which the figure was made were gathered in the Frindsbury Canal, near Gravesend, in June 1832.—M. J. B.

Enteromorpha intestinalis.

October 1st 1832.

ENTEROMORPHA intestinalis.

Intestine-like Ulva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* tubular, membranaceous, green, reticulated. *Fructification* three or four roundish granules aggregated in the reticulations.

SPEC. CHAR. Frond simple, inflated, sinuated.

SYN. Enteromorpha intestinalis. *Link, Hor. Phys. Ber.* 5. (fide Grev.). *Grev. Brit. Alg.* 179.
Ulva intestinalis. *Huds. Fl. Angl.* 568. *Linn. Sp. Pl.* 1632. *Agardh, Sp. Alg. v.* 1. 418.
Solenia intestinalis. *Agardh, Syst. Alg.* 185.
Tremella marina tubulosa intestinorum figura. *Dill. t.* 9. *f.* 7.

IN fresh and salt water; attached by a small scutate base, but soon broken off, and floating in dense intricate masses, which look as if they were in a state of fermentation from the quantity of air that is contained in the tubes. Frond tubular throughout, very variable in length, below very fine, gradually swelling upwards, obtuse, greatly varying in breadth, and in general much sinuated. Here and there a specimen is found forked once, but this is by no means the common state. The substance is membranous, adhering imperfectly to paper in drying, of a much duller green than the last, especially when dry, by which it is easily known.

Frond reticulated, but the reticulations are not disposed regularly, and have often more than four angles. In some

very young specimens however, which grew in a proliferous manner from very old fronds, the reticulations were in right lines.

This species occurs sometimes at a great distance from the sea, as in the Trent near Derby. It seems to be most nearly allied to *Enteromorpha compressa*, with unbranched specimens of which, if such ever occur, it would very easily be confounded. Nothing can be more variable in respect of length and breadth; sometimes it is only a few inches in length, at others as many feet. Again, specimens occur not more than two lines broad, while others exceed three inches.—M. J. B.

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Dec.r 1st 1832.

RUMEX pratensis.

Meadow Dock.

HEXANDRIA Trigynia.

GEN. CHAR. *Cal.* of 3 leaves, combined at the base. *Cor.* of 3 petals. *Stigmas* multifid. *Nut* triquetrous, covered by the enlarged petals, which often bear tubercles.—*Hooker.*

SPEC. CHAR. Flowers mostly perfect. Enlarged petals unequal, toothed at the base, with an entire triangular point; one principally tuberculated. Leaves oblong-lanceolate, wavy. Clusters nearly leafless. Whorls distinct.

SYN. Rumex pratensis. *Mert. & Koch, Deut. Fl. v.* 2. 609.

R. cristatus. *Wallr. Sched. Crit.* 163. *Fries, Nov. Suec. ed.* 2. 100.

R. acutus. *Spreng. Syst. Veg. v.* 2. 159.

FROM the marshes of the Adur, near Henfield, Sussex, where it was first distinguished in 1820. It grows also by the Arun, at Amberley. Mr. Forster has observed it in marshes on the Essex side of the Thames, and Mr. Sowerby by road-sides about the northern outskirts of the metropolis. It is probably not uncommon, especially in places subject to winter floods, although generally overlooked from its resemblance to *R. crispus*, *t.*1998. It flowers in June and July. An authentic specimen, kindly communicated by Mertens a little before his death, proves it to be, as was previously supposed, the *R. pratensis* of the German Flora. Wallroth first particularly described it, under a name which DeCandolle, it appears, had already assigned to a different species; and it is the *R. acutus* of various southern local Floras, as

well as of Sprengel in his edition of the *Systema Vegetabilium* *.

Root fusiform. Stem three feet or more in height in favourable situations, furrowed, smooth to the touch in the lower part, roughish among the flowers. Leaves oblong-lanceolate, wavy, smooth, except a little roughness on the nerves and veins on the under side; the base of the lower ones rounded, approaching more or less to cordate, and often oblique; root-leaves bluntish, the rest pointed. Branches upright, forming a panicle of long clusters of flowers. Whorls not crowded, a few of the lower ones only subtended by a leaf. Flowers mostly perfect, but occasionally intermixed, as in other "*Lapatha*," with a few of separate sexes. Calyx never reflexed. Inner valves of the flower ("*petals*") whilst in flower oblong, obtuse, and slightly toothed; when in seed, somewhat heart-shaped at the base, dilated and toothed in the lower part, terminated by a short triangular entire point; the outermost larger than the others, more dilated and more deeply toothed, and bearing an ovate tubercle, whilst in the others the midrib is usually but slightly incrassated. Not rarely, however, (both in this plant and in *R. crispus*,) the tubercles on the three valves are nearly of equal size. Seed (or nut) acutely triquetrous.

R. pratensis is in some respects intermediate between *R. crispus* and *R. obtusifolius*, *t.* 1999, but most allied to the former, with which it nearly agrees in habit, and in being of rather stouter growth than *R. sanguineus*, *t.* 1533, and *R. acutus*, *t.* 724, the *R. Nemolapathum* and *R. conglomeratus* of continental botanists. The leaves are somewhat broader than those of *R. crispus*, and less curled; the clusters are less crowded, and the flower-valves unequal in size and more distinctly toothed. In *R. crispus*, although not entire, as they have been generally described, they are rather crenulate, or erose, than toothed. In *R. obtusifolius* the teeth are usually longer than in *R. pratensis*, and the entire terminal part of the valves is mostly oblong or almost lingulate.

Our plant is not found in Campdera's Monograph of the genus.—W. B.

* The Linnæan character of *R. acutus* certainly agrees better with this plant than with the *R. acutus* of Smith, on which no other author seems to have found dentate valves. Linnæus probably applied the name to more than one species.

Dec.r 1.st 1832.

CAREX aquatilis.

Long-spiked Mountain Carex.

MONŒCIA Triandria.

GEN. CHAR. *Spikes* imbricated, diœcious or androgynous. *Calyx* a single glume. Barren flowers: *Cor.* none. Fertile flowers: *Cor.* urceolate of one piece, persistent and inclosing a nut. *Stigmas* 2—3.

SPEC. CHAR. Fertile spikes 3—4, linear, elongated, attenuated downwards, somewhat distant, the lower ones pedunculated. Stigmas 2. Bracteas long, foliaceous, sheaths none. Fruit roundish; obovate with a very short entire point. Stem smooth, obtusely triangular. Sheaths of the leaves never fibrous.

SYN. Carex aquatilis. *Wahl. Act. Holm.* 1803. 165. *Fl. Lapp.* 246. *Willd. Sp. Pl. v.* 4. 303. *Spreng. Syst. Veg. v.* 3. 829.

THE subject of the present plate is extremely common on the Clova range of mountains, where it flourishes on the flat marshy spots of the table-lands, often to the exclusion of other plants. About eight years ago it was gathered by Professor Hooker, Mr. Burchell and myself; and it has since been found in the greatest abundance on every excursion made to that district by Professor Graham and his friends. Having ascertained last year that it could not be referred to any British described species, it was with great satisfaction that I was lately enabled to determine it by the assistance of a Lapland specimen of *C. aquatilis*, communicated by my friend Professor Fries.

C. aquatilis is a well-marked species, from one to two feet in height (in this country), very erect in its mode of

growth, aggregated (not tufted), thick and robust towards the creeping root, and easily torn out of the ground. The leaves are long, scarcely more than two lines broad, erect; gradually acuminated, slightly rough at the keel and margin, somewhat glaucous. Stem obtusely triangular, firm, smooth. Bracteas foliaceous, erect, rising above the spikes; sheaths none. Fertile spikes 3—4, cylindrical; the upper ones sessile; the lower ones more or less pedunculate, often near two inches in length, and attenuated downwards. Sterile spikes 2—3, besides which the uppermost fertile ones are often terminated with barren flowers. Calycine glumes oblong-lanceolate, about as long as the fruit, but narrower. Fruit obovato-globose, with a very short entire point. Stigmas two.

This species is compared with *C. stricta* by Wahlenberg, with which it has certainly most affinity. It differs in the long foliaceous bracteas, and the obtusely angular stem, and in the absence of the filamentous reticulation at the sheathing bases of the leaves.

In places formerly very moist, but from which the water has gradually drained, the plants were observed to have dwindled down to nine or ten inches in height; the spikes shorter and closer together. In more favourable spots they are very nearly two feet. In Lapland, however, they much exceed this size, and are, besides, said to grow in the streams and lakes throughout the whole of the wooded portion of the alpine and sub-alpine districts. It is remarkable, therefore, as Dr. Graham justly observes, (*Phil. Journ.* Oct. 1832,) that our plant should never be seen off the naked and exposed table-land of the mountains, where, as far as we know, it is never found actually growing in the water.

The plant distributed by the Unio Itineraria in 1828 as the *C. aquatilis*, Wahl., I believe, with my friend Dr. Graham, to be only *C. cæspitosa*.—R. K. G.

Tortula rigida

TORTULA rigida.

Rigid Screw Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Peristome* of 32 spirally twisted teeth. *Calyptra* dimidiate.

SPEC. CHAR. Stems short, simple. Leaves rigid, linear-subulate, pointed, incurved, grooved, nerved and slightly keeled, the margins membranous and inflexed. Capsule oblong, inclined. Lid subulate.

SYN. Tortula rigida. *Turn. Musc. Hib.* 43. *Hook. & Tayl. Musc. Brit. ed.* 2. 53. *Sm. Fl. Brit.* 1249.

Barbula rigida. *Hedw. St. Cr. v.* 1. 65. *t.* 25? *Schultz in Nov. Act. Cæs. v.* 11. 196. *t.* 32? *Web. & Mohr, Fl. Crypt. Germ.* 212.

Bryum rigidum. *Huds. Fl. Angl.* 477.

Bryum capitulis erectis, foliis carinatis siccitate crispis. *Neck. Meth. Musc.* 193.

RATHER frequent on mud walls, and on banks of clay and chalk, throughout England. Our specimens were gathered in Cheshire, Nov. 1828.

Stems growing in patches, firmly rooted in the soil. Leaves dark shining green, much curled when dry, sometimes very obtuse, in which state it becomes *T. enervis* of authors, the nerve very broad, often reddish, slightly prominent at the back of the leaf, in some cases inconspicuous, always concealed on the upper side by a dense covering of jointed papillæ, of an oblong shape, which overspread the disk of the leaf, except the folded margins; hence it has been overlooked by Smith, and its existence disputed by Schultz; but after these papillæ have been removed, the

nerve becomes sufficiently evident, being much thicker than the adjoining parts, and of different texture. Fruitstalk slightly curved above. Capsule cylindrical, reddish brown, shining, more or less inclined, never quite erect. Peristome reddish, less twisted than in any other British Tortula, and divided to the base into 32 slender, obscurely paired, ciliæ, corresponding very nearly with those mosses which are referred to the genus *Didymodon*, and only distinguishable by being slightly twisted together when dry. Lid, as in all others of the genus, spirally striated, awl-shaped, half as long as the capsule.

The original specimens from which the figure *t.* 180 of *Engl. Bot.* was taken, prove to be identical with this species, and some apology is due to our readers for this republication. An unexceptionable figure of the genuine *Tortula rigida* of British authors has perhaps not yet appeared. In the *Musc. Brit.* of Hooker and Taylor, *t.* 12, the nerve is much too strongly expressed; and as that work is the principal authority for a species whose very existence is disputed by continental Bryologists, we conceive it to be highly expedient to represent the real characters of a moss which has been so generally misunderstood, and which is so variable and ambiguous as to have been described under two different names in a work of acknowledged merit. After much inquiry, we arrive at the conclusion that no moss answering the description of *Tortula enervis* has been found either in Britain or on the Continent; but we recommend a further examination to those who have better opportunities of forming a satisfactory opinion on this subject.—W. W.

2760.

1555.

Hypnum laricinum.

Dec.r 1.st 1832.

HYPNUM laricinum.

Larch Feather Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruit-stalk* lateral. *Peristome* double; *outer* of 16 teeth; *inner* a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems erect, simply pinnate. Branches straggling, flagelliform. Leaves erect, prominent at the base, loosely imbricated, cordate-acuminate, with serrulate revolute margins, nerved half way, deeply channeled and keeled, papillose at the back. Capsule cylindrical, incurved; lid conical, obtuse, subrostrate.

SYN. Hypnum abietinum. *Swartz, Musc. Suec.* 54.*
H. laricinum. *Hook. Brit. Fl. v.* 2. *P.* 1. 87. (not of *Hook. Musc. Exot. t.* 35.)

FOUND on Knutsford Moor, in Cheshire, July 1831: our specimens were gathered in April 1832.

A native of marshy ground, occurring in small loose patches of a yellowish green colour. Stems two or three inches long, thickened towards the top, copiously beset, as well as the branches, with greenish branched radicular fibres, partly attached to the bases of the leaves, which are loosely and distantly imbricated in five rows, nearly erect, nerved above half way, their bases rounded and very prominent, those of the stem slightly turned to one side, very little altered in appearance when dry, their texture membranous and glossy, the reticulation quite different from what is found in *H. abietinum*, but, as in that species, the leaves are rough at the back with minute papillæ, though less copiously. Perigonial leaves orbicular, acuminate, concave, their points recurved. Perichætial leaves lanceolate, acuminate, erect, striated, serrulate, nerved above midway. Fruitstalks numerous, solitary, above two inches long, smooth and shining. Capsule cernuous, much bent. Lid sometimes conical-obtuse, with an apiculus; in other cases somewhat rostrate. Calyptra white.

This species is remarkable for its leaves being furnished

* See Hook. & Tayl. *Musc. Brit.* ed. 2. 175.

with an almost saccated keel, not reducible by pressure to a plane surface: the pale nerve lodged within it is liable to be overlooked, and the minute serratures of the margin are also rendered obscure by the recurvation of that part from the apex almost to the base of the leaf.

There is much reason to believe that all the fructified specimens communicated from Sweden by Dr. Swartz, named *H. abietinum*, and especially those in the Linnæan Herbarium, correspond with our *H. laricinum*; and that the genuine *H. abietinum* was known to Linnæus only in a barren state, notwithstanding the following passage in Smith's *Fl. Brit. p.* 1301: "Neckerus ad hypothesin suam quo jure stabiliendam, fructum ferri in hâc specie (*H. abietino*) contra Linnæi assertionem, pernegavit:" it is even doubtful whether any European examples of that moss be known at the present day. In Bridel's *Bryol. Univ. v. 2. p.* 574, several instances of fertility are noticed; but that author is confessedly unacquainted with the Swartzian specimens already mentioned, and has quoted as a synonym the description given in the *Musc. Suec.* which we have now ventured to appropriate. The true *H. abietinum* of *Musc. Brit.* has the cauline leaves broadly ovate-acuminate, (not cordate, as they are usually described,) those of the branches evidently turned to one side, all of them slightly spreading from the base upwards, appressed when dry, and of an aspect so very different from our *H. laricinum*, that, once compared, it is impossible to confound them.

The specific name of our plant is adopted not only on account of its resemblance to the larch, but also to commemorate its former association with a kindred species from which it is now, as we trust, satisfactorily distinguished.—W. W.

P.S. Since the above description was written, we have had reason to think that *H. Blandovii* corresponds with our plant in most of its characters, and especially in having a deep carina to the leaf. We judge of that moss only from description, and think it best to retain our plant under its present name, as being more likely to excite the attention of our muscological readers, accompanied by the following remarks. Dr. Mohr, deservedly eminent for accuracy, in his account of *H. Blandovii*, describes it "foliis dorso lævibus," their reticulation being composed of hexagonal areolæ, and thereby distinguished from *H. abietinum* (v. *Fl. Crypt. Germ.* 333). In Bridel's *Bryol. Univ. v. 2. p.* 578, the areolæ are said to be roundish-rhomboid, "folia dorso lævissima, satis dense imbricata:" in other respects, however, we find much accordance; "nervo abrupte desinente et plicâ mediâ illum involvente, instructa, basin versus paginâ exteriore tomentoso-villosa."—W. W.

Cladonia cariosa

CLADONIA cariosa.

Carious-stalked Cladonia.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Tubercles* discoid, somewhat margined, at length convex, on hollow stalks.

SPEC. CHAR. Leaf-scales small, lobed, crenate. Stalks roundish, cancellated, warty, divided at the summit into a few thick upright branches. Tubercles brown, clustered, confluent.

SYN. Cladonia cariosa. *Floerke, Clad.* 11. (excl. vars.) *Spreng. Syst. v.* 4. 272.

C. degenerans b. *Fries, Lichenogr. Eur. Reform.* 221.

Cenomyce cariosa. *Ach. Lich. Univ.* 567. *Syn.* 273.

Bæomyces cariosus. *Ach. Meth.* 326. *Wahl. Fl. Lapp.* 451. *Fl. Suec.* 852.

Lichen cariosus. *Ach. in Nov. Act. Stockh. v.* 22. 343. *t.* 4. *f.* 4.

ON barren heaths, growing on the ground; apparently of rare occurrence in Britain. We have seen it only from Teesdale, where our specimens were gathered by Mr. Robertson, and from Lound Heath, near Yarmouth, where it has been found by Mr. Dawson Turner.

Scales or leaves of the thallus pale, dull, greyish green above, very white beneath, small, mostly crowded, variously divided with ascending, crenate, rounded or oblong lobes. Stalks an inch or rather more in height, and two or three lines in thickness, imperfectly cylindrical, more slender at the base, more or less dilated upwards, and divided from about the middle into a few simple or again slightly divided branches, which are in general nearly

equal in height, and sometimes so arranged as to form a sort of spurious pervious cup; the surface very rugged, the greenish grey epidermis being broken into small granules, which sometimes become leafy, and the white internal substance splitting longitudinally, in a most irregular manner, as if by the separation of its component fibres, in clefts of various sizes, open to the central hollow. Tubercles brown, varying in intenseness of hue, convex even when small, confluent into a rugged capitulum of larger diameter than the branch that supports it, the summit of which it embraces with its reflexed edges, internally hollow with some granules and intersecting fibres.

Cenomyce leptophylla of Acharius, first published in *English Botany*, *t.* 1782, under the name of *Lichen microphyllus*, (Acharius himself having, according to Sir J. E. Smith, suggested the trivial name,) is so nearly allied to *C. cariosa* that future observation may, perhaps, prove it not specifically distinct. It differs however by its smaller size, more entire leaf-scales, and smooth and almost always undivided stalks.

We have not ascertained to what *Cladonia Dill. t.* 15. *f.* 15. *B.* really belongs; but we dare not follow Floerke in referring it to *C. cariosa*, notwithstanding the resemblance of the figure.

The decision of later writers, especially of Floerke, in favour of the generic name chosen by Hoffmann, has led to its adoption here, although the Acharian designation is, as applied to the whole genus, more truly descriptive.—W. B.

2762.

1472.

Febr 1st 1833.

CHARA Hedwigii.

Hedwig's Chara.

CRYPTOGAMIA Characeæ.

GEN. CHAR. *Stem* spirally striated, articulated, bearing whorled branches. *Fructification* of two kinds; spirally striated *nucules*, and coloured *globules*.—*Greville.*

SPEC. CHAR. Stem smooth, even, somewhat flexible. Branchlets articulated. Bracteas about equal to the nucule. Nucule ovate.

SYN. Chara Hedwigii. *Agardh, Syst. Alg.* 129.
Ch. vulgaris. *Hedw. Theor. t.* 32. 33. 1784. (not of *Fl. Dan. t.* 154.)

FORMING dense masses in stagnant water, from eight inches to a foot in length, slender, weak, quite smooth, bright green, sending out roots from the swollen lower joints. The individual plants are much branched, and more or less fastigiate, not very brittle when fresh, rigid when dry and retaining their green colour. The lower whorls distant, upper more approximate, each consisting of eight branchlets, variously patent or connivent, sometimes shorter sometimes longer than the interstices. Each branchlet consists of about eight articulations, with evident internal transverse partitions, the three lower bearing an ovate nucule, much larger than the accompanying globule beneath it, supported by four bristles none of which are longer than itself, besides which there are two or three more or less abortive bristles to complete the whorl of bracteas. Each articulation appears divided into two, in consequence of the smaller tubes, of which the wall is composed, consisting of two articulations. The upper joints, which bear no fruit, are furnished with a more or less perfect whorl of bracteas, and the last consists of but one or two of the

smaller tubes; so that each branchlet is apiculate. The bracteas have no external tubes and are tipped with a pellucid point. The globules are very small and fall off before the nucules, which in age become quite dark. In old plants occasionally one or two of the bracteas are slightly longer than the nucules. Gathered at Sandwich July 9th, 1832.

Chara Hedwigii is a much neater and more delicate plant than *Chara vulgaris*, of which the figure in *Engl. Bot. t. 336.* is very faithful. The specific difference consists in the different length of the bracteas compared with the nucule,—in the present plant the bracteas scarcely exceeding the nucule, in *Chara vulgaris* being at least three times as long. But there is besides this another very curious distinction;—all the articulations of the branchlets in *Chara Hedwigii*, which are at least eight in number, have a coating of spiral tubes; whereas in *Chara vulgaris*, where the articulations are from four to six, those above the fruit-bearing joints consist of a simple tube only, as is very correctly represented at *plate 5, fig. 32*, of *Trans. Soc. Arts, vol. 48*, and have no bracteas. Both have evident transverse partitions, though in *Chara vulgaris* the branchlets are described as inarticulate *.

As much interest has been excited both as to the fructification and the curious phænomena presented by the circulation in *Characeæ*, I beg leave to subjoin a few remarks in reference to the former subject, which, though they have no pretensions to novelty, still, as the observations on which they are grounded were made almost

* There is another published species from which it is more difficult to distinguish it, the *Chara pulchella* of Wallroth. In the absence of authentic specimens, it is very difficult to come to any satisfactory conclusion; but as he quotes the figure of Hedwig under *Chara vulgaris*, the first impression would be that his species is distinct. Mr. Borrer has very kindly communicated to me specimens, and some very valuable observations, with a view to a correct adjustment of the claims of *Chara Hedwigii* and *Chara pulchella*. And as one of his specimens, received by Mr. Sowerby from W. C. Trevelyan, Esq., gathered in streams at the head of Teesdale, exactly agrees with mine, though not in fruit,—and another from Totteridge Green, gathered in August, 1827, by Mr. Milne, answers to the description and figure of Wallroth, I think it will be better to retain both species, till a figure from fresh specimens from the latter locality be published, which may, perhaps, completely settle the point. Mr. Milne's plant is much more pellucid; very few of the upper articulations bracteated; the globules much more evanescent, and the nucules of a longer figure.

independently, may perhaps tend to confirm those which are already recorded.

In the *Systema Algarum*, Agardh has divided the Linnean genus *Chara* into two genera. Those species which have the tubes with striated walls and the two forms of fructification on the same individual, he retains in the genus *Chara*; the species with simple tubes, and the two organs on different individuals and without bracteas, he includes in his genus *Nitella*. Of these characters one must be given up, as the *Chara* figured at *t.* 2738 of the present Work, which has striated walls, bears the nucules and globules on different plants; while *Nitella translucens* is represented in *Engl. Bot.* as bearing the two on the same plant, and Mr. Borrer finds this to be the case in *N. gracilis* and in some specimens of *N. flexilis* and *N. nidifica*: and probably the accessory character of the genus *Nitella*, that it is destitute of bracteas, will be found equally untenable. Indeed, Mr. Borrer considers *N. nidifica* as furnished with bracteas*.

* "Part of a description of *Chara nidifica*, made from specimens found in a marsh-ditch at Henfield, July 4, 1827:—

"Whorled ramuli patent or reflexed, the lower ones two or three inches long, the upper gradually shorter; all contracted suddenly just below the minute acute apex: those at the upper knots of the primary and all of those on the secondary branches producing, at a short distance from their base, one, two, or more, frequently many, sessile *nucules*, accompanied usually by a smaller number of *globules*; and these are sometimes sessile also, but often raised on a short pedicel varying somewhat in length. The ramulus is usually bent a little upwards at this point. The fructification is subtended by four slender bracteas, of varying and often considerable length; three of them placed on the under-side of the ramulus and at right angles with it, the fourth lateral, and usually pointing upwards. This last often, and one of the others sometimes, has near its base another smaller cluster of fructification, supported in like manner by a secondary set of bracteas. Not unfrequently also another cluster of fructification, with its attendant bracteas, is produced on the main ramulus, a line or two above the cluster nearest to its base. [This description was taken from the larger fructiferous ramuli: whether the conformation of the smaller ones is the same, the crowded mode of their growth prevented me from ascertaining.] *Nucule* ovato-globose, with a minute point, possibly a stigma, but I am more inclined to think it composed of the concrete points [I find them 5 in *C. flexilis*,] of the integument of the nucule, which forms a transparent spirally striated limbus about the pale, afterwards yellow, and at length dark brown, nucleus.

"The tube of the main thread (or stem) and of its branches is continuous; that of the ramuli and of the bracteas has a few contractions towards their apex, with, I believe, a real internal dissepiment at each.

"Such was my Henfield plant, and I believe that found at Cley in 1806 (see *Engl. Bot.*) was precisely the same, except its shorter growth. The ditch at Henfield is about seven miles from the sea in a straight line, much

Of the two forms of fructification, it has been most clearly proved by Kaulfuss and Vaucher that the nucules are reproductive, and more recently by Mr. Varley; and it is not difficult to understand how their outer wall is formed by the union of the several divisions of a whorl, and the germ within by the central bud, which would otherwise have been evolved. The nucules, then, may be either gemmæ, or real capsules. As regards the globules, Wallroth asserts that he has raised young plants from them, and considers them as analogous to what Hedwig calls anthers in mosses and to the gemmæ of certain perfect plants. His observations do not appear to have been verified by later writers. Meanwhile it is desirable to have a correct notion of their structure, by which means alone they can be viewed in the relation of their several parts to those organs of the plant of which they are doubtless modifications.

Before I proceed to give my own description, it may be well to state what has been said by the latest writers whose observations I have met with. In the beginning of his paper, (published in 1826 in the *Nov. Act. Phys. &c. vol.* 13, *pt.* 1. *p.* 123,) *Uber die Anatomie und den Kreislauf der Charen*, Agardh gives no certain account of the structure of the shell of the globules. He figures the cup-shaped bodies to which the conferva-like filaments within the globule

more by the course of the water, but is occasionally affected by the tide: that at Cley was very near the beach, and the water in it probably brackish; but of this I am not accurately informed. The plant from which the principal figure in *Engl. Bot.* was drawn, was from a ditch at Lancing, which I believe the tide never reaches,—not, as erroneously stated, from Shoreham Harbour. In this the thread was more slender, and, I think, of less entangled growth; the globules stood singly on a longer pedicel, and no nucules were produced. I believe the distribution of the bracteas was as described above, although it is not well represented in Sowerby's figure.

"Perhaps the following character may serve to distinguish this species:—

"CHARA *nidifica*, filo lævi, ramulis articulatis indivisis apiculatis, bracteis quaternis semiverticillatis divaricatis filiformibus nuculâ pluries longioribus.

"Of the other British *Nitellæ*, already observed, I do not yet understand *C. translucens*, although I believe it distinct; and *C. flexilis* and *C. gracilis* are distinguished from *C. nidifica* and from each other thus:—

"*C. flexilis* has its ramuli di-trichotomous;

"*C. gracilis*, doubly trichotomous.

"How far these characters may be common to other species I know not; nor whether Agardh's species of the same names are synonymous with the plants of *Engl. Bot.*, which are what I have in view."—W.B.

are attached, but he could not discover how these cups were disposed. "They seem," he says, "to give rise to the rays of the star-like spots upon the surface of the globule, so that they lie towards the surface, while the threads are towards the centre. They are not however equal in number in every globule; they are easily separable from the threads attached to them, and soon lose the red pigment with which they are filled."

This account agrees only in part with what I have observed, and with the figures very recently given by Mr. Wilson. When the paper was already dispatched, Agardh met with Kaulfuss's *Erfahrungen über das Keimen der Charen*. Kaulfuss's account of the red globules differed from Agardh's, in that, at the closed end of the cup, where Agardh saw the filaments fastened, he perceived little bulbous bladders. These might be the scars of the filaments. Kaulfuss determined also that the cups are fastened to six of the superficial stars in the centre of the radii.

With regard to the number of divisions into which the globules split, Agardh could make no accurate determination. Kaulfuss specifies three, Wallroth 3—4, in which Dr. Hooker and Dr. Greville seem to coincide with him. Dr. Ackermann and Mr. Wilson alone seem to have discovered the real number, exactly eight, each being a precise eighth of the spherule.

I should have thought it needless to publish the present observations, had Mr. Wilson's been made on the fructification of a species of *Nitella*, in which, from the larger size and less incrusted coat, it is much easier to observe completely; as he doubtless would have left nothing worthy of recording. The little additional matter I have to offer (the question of the disposition of the cups being already determined by him,) relates to the disposition of the rays,—and a conjecture as to the probable mode of origination of the globules. The latter point however cannot be satisfactorily determined without an examination of the contents of the globules in different stages of growth; and this could scarcely be done with any hope of success except in the largest species of *Nitella*, which I have never yet had an opportunity of examining. When a complete notion of the structure and theory of the globules shall have been thus obtained, we may hope at last to discover, with some

certainty, their functions. In one single case Agardh saw, in a globule which he had kept some time in water, in the hope of observing its evolution, five or six spherical grains, which he supposed transformations of the cups. These may possibly be reproductive, and Wallroth's observations would lead us to expect something of the sort.

The species on which my observations were made was *Nitella flexilis Engl. Bot.* 1070, exactly agreeing with the figure and description. As Agardh refers this figure to *Chara opaca*, it may be well, for the sake of greater precision, to give a short description made at the time.—Root creeping; lower whorls sending out small brown fibres from the swollen knots. Main branches 2—6 together from the centre of the whorls, pellucid, light green. Whorls distant, of many threads, each bearing three or four branchlets with a single globule at their base, which is lateral when there are three ramuli. The ramuli have a small pellucid point, but are somewhat obtuse and have no articulations. In two individuals the whorled threads were very much subdivided, forming masses as in *Chara nidifica*: there was no fructification on these. The globules are not perfectly globose, but slightly obovate, with a very short pedicel: beneath the transparent external membrane, the surface is divided into eight equilateral triangles by one horizontal and two vertical great circles: in the center of each of these triangles is a subrotund area, from which lines radiate regularly so as to form obovate oblong cells,—the line which radiates from one triangle running to the centre of the outer boundary of the corresponding cell in the adjacent triangle. The globules are filled with a mass of transparent, colourless, flexuous, confervoid filaments, with articulations about equal in length and breadth; and minute orange globules, whose diameter is less than that of the filaments, are contained in the radiating cells, which are raised on the inner side. These globules are immersed in gelatine, as the green globules of the stem are. In the centre of each of the spherical triangles into which the surface is divided, on the under side, arises perpendicularly an orange cylinder which bears on the top a bell-shaped cup, which is at first orange, being filled with the same granules as the cells, afterwards pellucid and striate or plicate at the margin. At the place where the cup is

attached to its pedestal the confervoid filaments originate,—and if the cup and pedestal are separated, they are found to be attached to the base of the cup, not to the top of the pedestal. I could not ascertain whether all the eight pedestals are furnished with a cup, or not. It appears to me that the orange matter contained in the radiating cells has access, by means of the hollow pedestal and bell, to the curved filaments. The pedestal is certainly hollow, as, when dry, the orange mass contracts, exactly as the matter in the joint of a *Conferva*.

My figure of the cups does not exactly agree with Agardh's; but their shape may vary in different species:—in point of essential structure they agree. The question now arises, what relation do the several parts of the globule bear to the primitive organs of the plant? Previous to the solution of this, it should seem necessary to know whether the rays are subsidiary to the cup, or the cup to the rays. On the first supposition, it might be conceived that the cup and pedestal of each triangle represent a branch given off from the point of attachment of the globule, and torn off at the mouth of the cup by its development,—and then the filaments and radiating cells will answer to whorls given off from this central stem: the eight sets of cells soldered into one globe; and the central bud of each, become abortive. And this view will be strengthened if it be found that there is uniformly a ninth pedestal arising from the point of attachment of the globule, as represented in Mr. Wilson's figure, in which case the eight pedestals might be conceived to be given off from the apex of this ninth pedestal. And it is observable that the proper situation of the globule is central, though by the abortion of some of the filaments it is in general lateral. In the present species, when there are four filaments accompanying the globule, it is central; and so, when there are many filaments, it is represented in *tab.* 6, *fig.* 2, of Wallroth, *Ann. Bot.* If, however, we may build upon Agardh's single observation of the globule after a time containing five or six spherules, which he conceived might be gems, as illustrated by that of Wallroth mentioned above, we must have recourse to the second supposition:—in that case, we must conceive two sets of four principal branches to be formed one above the other, each bearing a whorl at the apex, the branches to be so incurved

as to turn the central bud of each whorl inwards, and to become so incorporated with the globule as to be indistinguishable, or possibly to form the outer coat, which seems distinct from the cells. The rays would then represent the whorl; the pedestal within, the continuation of the central stalk or branch; the filaments new contiguous whorls, and the bell the central bud. This, however, will hardly agree with the supposition of the bells being open at one end. Agardh does not figure them as open, but implies that they are so; his expression is, speaking of the narrow end of the bell, "an dem geschlossenen oder untern Ende, wo ich die Faden angeheftet gefunden habe" (*p.* 140),—"at the closed or lower end, where I have found the threads (meaning the confervoid threads) fastened."

My drawings were made in 1828, and I have had no opportunity of further investigation since; but I have no doubt that I have accurately represented what I saw in the specimens under examination: the matter, however, is open to correction.—M. J. B.

Fig. *a*, *Chara Hedwigii*; *b*, one of the branchlets with its nucules and globules magnified; *c*, a morsel of *Nitella flexilis* magnified; *d*, *e*, the globule; *f*, one of the triangles seen from within, with its pedestal; *g*, pedestal when dry; *h*, cup with pedestal and filaments; *k*, cup and filaments without pedestal; *l*, filaments and granules. The larger figure of the plant, with the accompanying representation of part of one of its ramuli, is from a specimen gathered by Mr. Borrer, at Henfield, in June 1826.

Febr 1st 1833.

BUPLEURUM falcatum.

Falcate-leaved Hare's-ear.

PENTANDRIA Digynia.

GEN. CHAR. *Fruit* ovate-oblong, obtuse, with prominent, acute, abrupt ribs; interstices flat; juncture contracted. *Calyx* none. *Petals* equal, broadish wedge-shaped, very short, involute. *Styles* very short, not extending beyond the circumference of their broad tumid bases. *Floral receptacle* none. *Flowers* all perfect and regular.—*Smith.*

SPEC. CHAR. Lower leaves obovate, stalked; upper linear-lanceolate, sessile. Partial involucrum of 5 lanceolate leaves, as long as the flowers; general 1—5-leaved. Stem panicled, leafy.

SYN. Bupleurum falcatum. *Linn. Sp. Pl. ed.* 2. 341. *Willd. Sp. Pl. v.* 1. 1372. *Jacq. Austr. t.* 158. *DeCand. Prod. v.* 4. 132. *Fl. Fr. ed.* 3. *v.* 4. 347.

B. angustifolium Monspeliense. *Ger. Em.* 608. *f.* 1. *Merrett* 17.

B. angustifolium. *Park. Theatr.* 578. 1.

GATHERED in August, 1832, at Norton Heath between Chelmsford and Ongar, Essex, where I discovered the plant in the preceding year. It grows by the road for nearly a mile, most plentifully a little on the Chelmsford side of the turnpike; and in great abundance in the hedges between the fields to a considerable distance on both sides of the road. The situation seems to preclude the idea of an escape from gardens, in very few of which this *Bupleurum* is, in fact, found cultivated.

Root perennial, woody, fibrous. Stems one or more, erect, 1—4 feet high, alternately branched in the upper part, striated, often flexuose and purplish. Leaves 5- or 7-nerved, entire, slightly glaucous, and, like the whole plant, smooth; radical ones obovate, on long stalks; lower stem-leaves lanceolate, also stalked; upper linear, sharply pointed, falcate, sessile, half embracing the stem, and slightly decurrent. Umbel usually of 8 or 9 slender rays. General involucrum 1—5 unequal leaves of variable shape, sometimes entirely wanting. Partial involucrum of 5 regular, lanceolate, sharp-pointed leaves. Flowers golden yellow. Petals concave, obtuse, incurved, shorter than the stamens. Germen compressed. Styles very short, erect, their bases much dilated and depressed. Stigmas simple. Fruit ovate, compressed.

This species is recorded as British, as I am indebted to Mr. Forster for pointing out, by Gerarde, Parkinson, and Merrett. Parkinson merely states it to grow in divers parts of this land, coupling it with his *B. latifolium*, the *B. longifolium* of Linnæus, which is not admitted into any modern catalogue of the British Flora. Gerarde speaks of it, and also of *B. rigidum*, *Linn.*, another species unacknowledged at the present day as British, as growing "naturally" among bushes on Bieston Castle in Cheshire. Merrett gives, "betwixt *Bromeley* and *Eltham*, in *Kent*, and at *Paddington*, beyond the bridge in the way to *Harrow-upon-the-Hill*;" where it is probably now lost.—Thomas Corder, Jun.

2764.
989 *

Feb.y 1st 1834

POLYGALA amara.

Bitter Milkwort.

DIADELPHIA Octandria.

GEN. CHAR. Two segments of the *Calyx* like wings. *Petals* 3 or 5, connected together; lower one keel-shaped. *Stigma* bilabiate. *Capsule* compressed, of 2 cells and 2 valves. *Seeds* solitary, crested.

SPEC. CHAR. Stems many, simple, ascending. Leaves obtuse; lower ones larger, obovate; upper ones strap-shaped. Flowers crested, racemose. Wings of the calyx as long as the petal. Capsule nearly orbicular, sessile.

SYN. Polygala amara. *Linn. Syst. ed.* 10. 1154. *Sp. Pl.* 987. *Jacq. Vind.* 262. *Austr. v.* 5. *t.* 412. *Fl. Dan. t.* 1169. (bona.) *Pers. Syn. v.* 2. 271.

P. amarella. *Crantz, Stirp. Austr. fasc.* 5. 438.

P. vulgaris, foliis circa radicem rotundioribus, flore cœruleo, sapore admodum amaro. *Bauh. Pin.* 215.

P. buxi minoris folio. *Vaill. Paris.* 161. *t.* 32. *f.* 2. (optima.)

FOUND growing abundantly at Cuckstone, Cobham, and other parts of Kent, in the summer of 1831, and recognised by me at the time, as *P. amara*. It has also been observed in Surrey and Wiltshire. In this country the plant appears to be peculiar to the chalk, and is perhaps not uncommon, being liable to be overlooked for *P. vulgaris*, of which, in the first edition of the *Species Plantarum*, it was ranked as a mere variety, and from which it is chiefly distinguished by the size and form of its lower leaves, which, as well as those of the barren shoots, are broadly obovate, blunt, sometimes spathulate and

slightly emarginate, varying from half an inch to an inch in length,—characters which, so far from changing, become even more marked in the cultivated plant. Upon the whole I am disposed to consider it a species, and it certainly possesses equal claims to that rank, with some others of the genus, admitted in works of authority. In the second edition of the *Species Plantarum*, where the plant occurs, for the first time in that work, as distinct, France and Austria are the only habitats mentioned, and the only figure quoted is that of Vaillant, from whom Linnæus seems to have adopted the species: for the sample in his herbarium, which he appears to have received afterwards, being without the usual mark of authenticity, cannot be reckoned of any authority. This last, distinguished by its more upright growth, larger leaves, and much smaller flowers, is what is figured in the *Botanical Magazine*, and is the *P. amara*, var. *a.* of Wahlenberg, ours being his var. β. *alpestris*, with the epithet "insipida" inserted in the character; but, in my opinion, neither it nor *vulgaris* is entitled to be called insipid, for they both possess a disagreeable bitter taste. The Kentish plant accords precisely with Vaillant, *t.* 32. *f.* 2. and *Flora Danica*, *t.* 1169, and likewise with the samples of *P. amara* from the elder Jacquin, in the Smithian herbarium. The *P. austriaca* of Crantz (*Austr. t.* 2. *f.* 4.) differs from both by its diffuse, branching stems, uniform spathulate leaves, and short clusters of smaller flowers and capsules. This is the *P. amara*, var. *a.* of *De Candolle*, who quotes under his var. β. Vaillant's *t.* 32. *f.* 3. which I should consider a good representation of *vulgaris*, but he takes no notice of *f.* 2. of the same accurate author. Our limits preclude me from entering further into detail on this subject, but I recommend the study and a proper application of the synonyms of these presumed species or varieties to those who possess the materials for that purpose.

Plant perennial, forming little tufts; throwing out numerous leafy shoots. Root simple, fibrous. Stems many, procumbent, or ascending, sometimes nearly erect, from two to three inches high, simple, leafy, green, or occasionally of a dull purplish colour, thickly beset with minute, elevated crystalline dots; the upper half distinctly angular; the lower part perfectly round and filiform. Leaves co-

pious, alternate, somewhat fleshy, bright green on both sides; the upper side smooth and glossy, and sometimes, as is the under side more especially, covered, like the stem, with minute, crystalline dots; the lower ones, and those of the barren shoots, larger, spreading, stalked, obovate, or spathulate, blunt, occasionally emarginate, or slightly mucronulate, attenuated at the base into a short, flattish footstalk, which is distinctly articulated at its connexion with the stem; varying in length from half an inch to an inch, and from three lines to a nail in breadth, furnished on the lower side with a prominent midrib, which is thickened towards the base; the margins blunt and even; those of the upper part of the flowering stems lanceolate, or strap-shaped, scarcely stalked, erect, mostly obtuse, four or five lines long, furnished with a very narrow, perfectly entire membranous border, becoming more visible towards the extremity. Footstalks very short, slightly concave above, with their base adpressed to the stem. Racemes terminal, simple, solitary, many-flowered. Flowers drooping, of a deep blue. Pedicels short, a line or two long, compressed, two-edged, of the colour of the flowers. Bracteas three, the intermediate one oblong, navicular, blunt, the length of the pedicel, with membranous margins, and, except the thick, obtuse keel, which is green, of the same colour as the flower; the two lateral ones considerably smaller, lanceolate, pointed, and generally remaining longer than the intermediate one, which falls off before the expansion of the flower, leaving an elevated tubercle to which it is articulated, and in which the pedicel is inserted. Calyx membranous, persistent, five-leaved, coloured, minutely dotted; two inner leaves (wings) large, obovately-oblong, scarcely mucronulate, attenuated towards the base into a short claw, with three ribs, which are much branched in the lamina, and but rarely confluent and never reticulated; three others scarcely half the length, oblong, concave, slightly mucronulate, furnished with a single prominent midrib, but destitute of veins. Petals three, about the length of the wings, closely united at the base, so as to resemble one deeply trifid, rolled together into a tube, which is bearded within; lateral ones oblong, plane, blunt, veined, but not reticulated; intermediate one about the same length, but of a dissimilar form, cucullate, geniculate, the edges con-

verging, green, entirely covering the anthers in the early state, crested at the top, the crest formed of many narrow, simple or branched segments. Filaments membranous, pale green, or whitish, united closely together into a tube, split at the top into two short lobes. Anthers eight, innate, orange, one-celled, parallel, united together, and opening by an oblique foramen. Ovarium obovate, compressed, two-celled: ovules solitary, pendulous. Style shorter than the ovary, compressed, dilated upwards. Stigma bilabiate; lower lip concave, slightly mucronulate, purple, straight, in the early stage inclosing the upper lip, which is not above half the length, glanduliform, green and reflexed. Capsule two-celled, two-valved, compressed, nearly orbicular, minutely dotted, notched at the top, narrowed at the base, but sessile, and furnished with a double membranous border. Partition simple, thin and membranous, narrow, contrary to the cells, the edge towards the axis of the spike. Seeds oblong, solitary, clothed with soft hairs. Arillus attached to the base of the seed, succulent, parted into three oblong, obtuse, converging lobes. Testa threefold; the outermost a thin membranous pellicle, closely adhering to the intermediate one, which is crustaceous, and of a dark chocolate colour; the innermost thin, membranous, cellular, and of a pale yellow colour, closely adhering to the albumen, which is copious, fleshy and white. Embryo straight, yellow. Cotyledons oval, obtuse, flat, somewhat convex outwardly. Radicle obtuse, slightly compressed, half the length of the cotyledons.—D. Don.

Pubd 1st 1833

2766.

1068**

Feb.y 1st 1833.

2765 and 2766.

SONCHUS asper.

Sharp-fringed Annual Sowthistle.

SYNGENESIA POLYGAMIA-Æqualis.

GEN. CHAR. *Receptacle* naked. *Calyx* imbricated, swelling at the base. *Down* simple, sessile.

SPEC. CHAR. Root annual. Seeds smooth, longitudinally ribbed. Leaves undivided or pinnatifid, sharply toothed, clasping the stem with rounded auricles; none on distinct stalks.

α. leaves undivided. *t.* 2765.

β. leaves pinnatifid. *t.* 2766.

SYN. Sonchus asper. *Hoffm. Deut. Fl. v.* 2. 109. *Wahl. Veget. Helv.* 137. *Spreng. Syst. Veget. v.* 3. 649. *Dodon. Pempt.* 643. *f.* 2. and *Ger. Em.* 291. *f.* 1. (from the same block.) *Ger. Herb.* 229. (where the figure is transposed with that of *S. oleraceus*). *Tabern. Hist.* 498. *f.* 1.

S. fallax. *Wallr.* "*Ann. Bot.* 98." *Sched. Crit.* 432.

S. oleraceus γ. δ. asper. *Linn. Sp. Pl. ed.* 2. 1117. *Sm. Fl. Brit.* 817. *Engl. Fl. v.* 3. 343.

S. oleraceus δ. ε. *Huds.* 336.

S. &c. *Fl. Dan. t.* 843.

S. asper non laciniatus. *Raii Syn.* 163. *Park. Theatr.* 803. *f.* 1.

S. asper laciniatus. *Raii Syn.* 163.

S. asper dentatus. *Dill. in Raii Syn.* 163.

S. *no.* 21. α. and *no.* 22. β. *Hall. Hist. v.* 1. 10.

S. lævis tenerior. *Lob. Icon.* 235. *f.*

S. tertius asperior. *Dodon. Pempt.* 643. *f.* 3.
S. asperior. *Ger. Em.* 291. *f.*—(from the same block as the two preceding.)
Prickly-dented Sowthistle. *Petiv. t.* 14. *f.* 4.
Prickly-jagged Sowthistle. *Petiv. t.* 14. *f.* 5.

OF the synonyms cited, some belong to α, some to β, and some to both varieties, which are indeed intimately connected by various intermediate modifications. They are as common on all sorts of cultivated ground as *S. oleraceus*, *t.* 483, and are found also in wilder hedges, and in somewhat watery places, where the other scarcely occurs.

S. asper agrees with *S. oleraceus* in stature and habit, and undergoes nearly parallel variations in size and in the shape of its leaves: but Wallroth has pointed out distinctions which seem permanent and essential in the auricles of the leaves, and especially in the seeds; to which may be added that the lowest leaves in that species are on bare stalks, whilst in this they are webbed to their junction with the stem. The seeds of *S. oleraceus* are conspicuously wrinkled transversely, as well as ribbed longitudinally; those of *S. asper* are merely furnished with longitudinal ribs: they are also more compressed, and have a thinner and almost membranous margin, which is so minutely denticulate that a glass of considerable power is required to distinguish the teeth; but upon the ribs of the disk also teeth are discoverable with a still more powerful glass, especially towards the base of the seed. The leaves are fringed with more rigid and, in general, more numerous teeth than those of *S. oleraceus*, and the lobes, in the sinuated-leaved varieties, are usually less remarkably runcinate, but have the margin more crisped, and often very prickly from its teeth being presented in several rows. The upper surface of

the leaves is mostly of a bright green and shining in this species, and glaucescent in the other; but both species vary occasionally in this point, as well as in the presence or absence of gland-tipped setæ on the branches of the panicle. The calyx-scales sometimes are even, and sometimes have a few sharp teeth on the keel. The deciduous cottony web on the young flower-stalks is mostly wanting; and when found, it is less copious than in *S. oleraceus*.

The trivial name bestowed by the old authors and adopted by Hoffman, (as it had been by Linnæus to distinguish the forms of this species as varieties of *S. oleraceus*,) is most manifestly appropriate to the rougher states of the species; but the rigid and spine-like teeth with which the leaves are fringed, sufficiently justify its application to the flat-leaved α. also. Yet Wallroth's name *fallax* ought perhaps to be preferred, Gærtner having figured the seed of *S. oleraceus*, in his *tab.* 158, under the name of *S. asper*.

SONCHUS oleraceus (*t.* 843.)

may be distinguished by the following specific character.

Root annual. Seeds cancellate. Leaves undivided or pinnatifid, toothed, clasping the stem with spreading sagittate auricles; lowest leaves stalked.

α. leaves undivided or nearly so.

β. leaves pinnatifid.

Some of the principal synonyms, belonging mostly to β, are

Sonchus oleraceus. *Hoffm. Deut. Fl. v.* 2. 108. *Wallr. Sched. Crit.* 431. *Curt. Fl. Lond. t.* 58. —α. lævis. *Linn. Sp. Pl. ed.* 2. 1117.—α. β. *Sm. Fl. Brit.* 817. *Engl. Fl. v.* 3. 343.—α. β. γ. *Huds.* 336.

S. *Fl. Dan. t.* 682.

S. lævis. *Raii Syn.* 162. *Ger. Em.* 292. *f. Ger. Herb.* 229. (with wrong figure.)

S. lævis latifolius. *Ger. Em.* 292. *f. Ger. Herb.* 230. *f.* 3.

Other synonyms of both species are collected in Smith's *English Flora*, which, with a few exceptions, we have verified.

The marginal teeth of the leaves of *S. oleraceus* are generally in the plane of the leaf.—W. B.

BRYUM squarrosum.

Scaly Thread Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalks* terminal. *Peristome* double; *outer* of 16 teeth; *inner* peristome a membrane cut into 16 equal segments, and usually with intermediate filiform processes. *Calyptra* dimidiate.

SPEC. CHAR. Stems filiform. Leaves obovate-acuminate, spreading, recurved, keeled, the nerve vanishing below the serrulated apex. (Capsule ovate, nearly erect; lid conical. *Schwægr.*)

SYN. Bryum squarrosum. *Linn. Sp. Pl.* 1585. *Hedw. Sp. Musc.* 186. *t.* 44. *f.* 6—11. *Schwægr. Suppl. v.* 1. P. II. 120. *Funck. Deutschl. Moose.* 60. *t.* 31. *n.* 28. *Drum. Musc. Am. v.* 2. *n.* 248.

Mnium squarrosum. "*Linn. Fil. Meth. Musc.* 364."

Meesia squarrosa. *Wahl. Lapp.* 356. *Wahl. Suec.* 730.

Orthopyxis squarrosa. *Pal. Beauv. Prodr. d'Æthéog.* 79.

Paludella squarrosa. *Brid. Bryol. Univ. v.* 2. 1. *Schwægr. Musc. Frondos.* 37.

Hypnum Paludella. *Web. & Mohr. Fl. Crypt. Germ.* 274.

FOUND on Knutsford Moor, Cheshire, April 1832, growing with *Hypnum laricinum.*

A beautiful and singular species, with weak slender stems,

3 inches long, with innovations or accessory shoots from the upper part, densely covered below with dark brown fibrous roots. Leaves in five rows, pale purplish green, acutely keeled, widely spreading and much recurved towards the apex, the margin plane, except towards the base, where it is recurved; they are not much altered by exsiccation. Perichætial leaves lanceolate, larger than the rest. Perfect fructification has not been observed in British specimens. Bridel describes the capsule "oblong, slightly bent, with a short acute lid, the leaves in six rows, and the nerve continued to the summit." An original specimen from Dr. Swartz exactly accords with our plant. Schwægrichen, adverting to the structure of the inner peristome, has placed this moss among species of uncertain genus,—a consequence of the superabundant refinement of the principles of classification for which the works of continental muscologists are now so conspicuous: and the same author mentions a tedious and ineffectual search for male fructification; which we consider as a decisive proof of the great inconvenience of any generic character derived from that source.

The synonyms are mostly given by Dr. Hooker.—W.W.

2768.

1943.

Verrucaria submersa?

April 1st 1833.

VERRUCARIA submersa.

Rivulet Verrucaria.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Tubercles* of a different substance from the thallus, simple, convex, not expanding, but furnished with a central pore, and inclosing a somewhat gelatinous nucleus.

SPEC. CHAR. Crust tartareous, somewhat gelatinous, thin, continuous; when young green and diaphanous; at length opake and black; pale brown when dry. Tubercles immersed, dimidiate, depressed, the central papillæ only emerging.

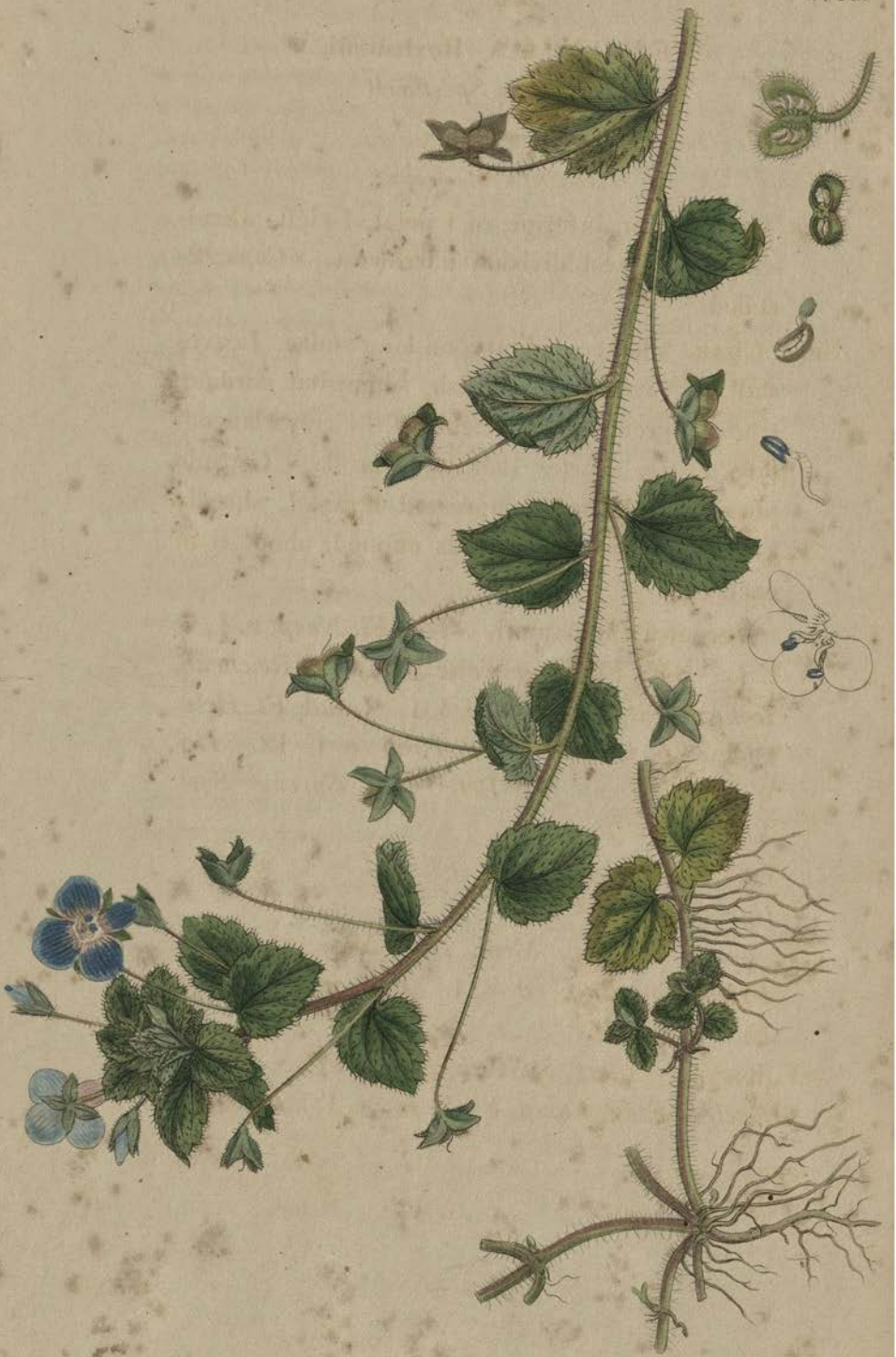
ON stones under water in clear shallow streamlets and springs, in somewhat mountainous districts. It occurs in Hind Head, and near Abinger, Surrey, above Rundhurst at the foot of Black Down, in Harting Coomb, and at Edburton, Sussex; and Mr. Joseph Woods has communicated specimens from the North of England.

Crust at first circular, but soon confluent and irregularly effused; sap-green and diaphanous, so as to show the immersed tubercles, in young specimens and in the thin parts of older ones, of which the thicker parts are black; surface continuous, very minutely rugose or wavy. Tubercles numerous, depressed, their base often effused, and not unfrequently so widely as to become confluent, and form an interrupted black substratum to the crust; their surface mostly covered entirely, the crust rising in a little prominence above each of them, and occasionally pierced by the minute central papilla; nucleus pale, not

subtended by the shell, so that when a tubercle falls off a black ring is left surrounding a bare spot. The nucleus of ripe tubercles escapes in drying in the form of a little white spicule, and leaves the pore rather more conspicuous than in the growing plant. When dried, thin specimens are of an oil-green*; thicker ones of a hair-brown*, or sometimes, probably when the plant has grown in a shady place, greyer, or almost cream-coloured. The original hue is not recoverable by the application of moisture, which the crust does not readily imbibe. In the dried state the surface loses the minute wrinkles, and is remarkable, especially in young specimens, for its oiled-like appearance: the edges are sometimes obscurely zonate. In confluent patches, narrow dark seams often mark the boundaries of the originally separate plants.

So nearly does this curious *Verrucaria* agree with the descriptions of *V. mucosa* of Whalenberg and Acharius, that it might be supposed the same; but a small specimen from Acharius, in the museum of the Linnean Society, rather favours the opinion expressed by Fries, in his *Lichenogr. Eur. Reform.*, that that Lichen is but a state of *V. maura*, *t.* 2456, a species distinguishable in its perfect state from *V. submersa* by its black colour when dry, and by having its surface minutely cracked all over. Dried specimens of *V. submersa* have more of the appearance of *V. nitida*, *t.* 2607, *f.* 1, than of any other of our species, but want the minute grey dots that are sprinkled over the surface of that Lichen.—W. B.

* Werner's *Nomenclature of Colours, by Syme.* Edinburgh 1814.



April 1st 1823.

VERONICA Buxbaumii.

Buxbaumian Speedwell.

DIANDRIA Monogynia.

GEN. CHAR. *Cor.* inferior, of 1 petal, 4-cleft, wheel-shaped; lowest division narrowest. *Caps.* 2-celled.

SPEC. CHAR. Flowers solitary, on long stalks. Leaves stalked, ovate, or roundish, somewhat cordate, coarsely crenate. Segments of the calyx lanceolate, acute, shorter than the corolla. Capsule obcordate; lobes compressed upward, sharply keeled, divaricated. Seeds cupped, about 8 in each cell.

SYN. Veronica Buxbaumii. *Ten. Fl. Neap. v.* 1. 7. *t.* 1. *Bieb. Fl. Taur.-cauc. v.* 3. 16. *Reichenb. Icongr. cent.* 3. 59. *f.* 430, 431. *Gaud. Fl. Helv. v.* 1. 36. *Guss. Fl. Sic. Prod. v.* 1. 12. *Lej. & Court. Comp. Fl. Belg.* 14. *Spreng. Syst. Veget. v.* 1. 75.

"V. Tournefortii. *Gmel. Fl. Bad. v.* 1. *no.* 29." (not of *Villars* *.)

V. persica. *Stev. Mem. Soc. Mosc. v.* 5. 341. *Fries, Nov. Suec. ed.* 2. 4. *Poir. in Lam. Dict. Enc. v.* 8. 542.?

V. hospita. *Mert. & Koch, Deut. Fl. v.* 1. 332. *Bluff & Fing. Comp. Fl. Germ. v.* 1. 25.

* Whose plant, according to DeCandolle, appears to be but a variety of *V. officinalis.*

long and quite obtuse calyx-segments, and the stem with short pubescence, without the intermixture of longer hairs. Whether the capsule is similarly carinate, cannot be determined from dried specimens. In the same collection is a specimen of *V. Buxbaumii* from the North of Persia, received from Steven as "*V. persica Desfontaines.*" Now, Desfontaines appears to have named his plant in a catalogue of the Paris Garden, and Gaudin pronounces *V. Buxbaumii* to be certainly the "*V. persica H. P.*" Ours should therefore be the plant of Poiret (as quoted doubtfully above), notwithstanding that he describes the flower-stalks as shorter than the leaves, and the corolla with oblong segments and shorter than the calyx. Reichenbach quotes Poiret without a question, observing that he has described the younger state of the plant.

In the *Flora Græca*, the corolla is figured rather smaller than we find it, and its segments somewhat pointed.

W. B.

April 1st 1823.

CAREX speirostachya.

Dense-short-spiked Carex.

MONŒCIA Triandria.

GEN. CHAR. *Flowers* diclinous, in a closely imbricated spike. *Scales* single-flowered. Male: *Perianthium* none. *Stamens* 3. Female: *Perianthium* monophyllous, capsular, persistent, contracted at the top, awnless at the base. *Stigmas* 2 or 3. *Nut* included within the enlarged perianthium.

SPEC. CHAR. Sheaths shorter than the peduncles. Female spikes about 3, distant, erect, ovate, dense, many-flowered. Fruit ovate, ventricose, ribbed, smooth, with a rough, cloven beak, membranous at the orifice.

SYN. Carex speirostachya. *Swartz, MSS. Sm. Engl. Fl. v.* 4. 98.
C. distans. *Fl. Dan. t.* 1049.
C. n. 1382 β. *Hall. Hist. v.* 2. 193.
C. n. 1383. *Hall. Nomencl.* 125.

THE whole herbage of a lively green. Root brown, creeping. Stems erect, slender, from a span to a foot high, bluntly 3-sided, smooth and glossy, leafy at the base, having a slight degree of roughness towards the top. Leaves erect, shorter than the stem, linear, acuminate, nerved, quite smooth, paler and slightly keeled below, the edges, especially towards the apex, rough with very minute, almost imperceptible teeth. Sheaths about an inch long, or rather more, close, smooth and shining, terminated by a blunt membranous appendage. Bracteas long and leafy,

linear, acuminate, rough at the edges. Male spikes mostly solitary, rarely two, cylindrical, rather acute, with elliptical, blunt, ferruginous scales, having a broad white scariose torn border, and a yellowish midrib. Stamens 3. Female spikes 2 or 3, distant, stalked, ovate, crowded, many-flowered, erect, about half an inch long. Peduncles longer than the sheaths, slender, capillary, straight, almost quite smooth. Scales broadly ovate, acute, brown, with a white scariose border, and a green rough midrib, occasionally projecting beyond the scale; the lowest ones rather obtuse. Style long, filiform. Stigmas filiform, spreading, minutely papillose. Fruit longer than the scales, ovate, triangular, ventricose, ribbed, smooth, green, terminated by a rather long beak, rough at the edges with minute teeth, cloven at the top, the lobes upright, with a white membranous border. Nut turbinate, triquetrous, smooth and shining, with rather prominent angles, and crowned by the persistent base of the style.

First observed by me in a marshy moor to the east of Mugdoch Castle, about ten miles north of Glasgow; I have also gathered it in marshes on the Campsie Hills, on the Ochill Hills, near Dunning, Perthshire, and in several stations in the county of Forfar. I have likewise seen specimens collected last summer by my friend Dr. Macreight on Morne mountains in the county of Down, Ireland. It is by no means a plant of rare occurrence in Scotland, being liable to be overlooked for *C. fulva* and *distans*, to both of which it is nearly related. Its first discovery is due to my late father, who appears to have collected it in Forfarshire, and by whom it was regarded as a variety of *C. fulva*, from which it is distinguished by its smoother herbage, much longer peduncles, broader and scariose scales, and more strongly ribbed fruit. The distinction between it and *distans* is more strongly marked in the dark brown cylindrical female spikes of the latter, abruptly pointed, broader scales, and shorter, smooth, and not membranously bordered beak. It appears also to come near to the *C. Hostiana*, but in that the stem is represented as more leafy, the female spikes about 4, and the fruit even with a shorter beak.—D. Don.

fig. 1. *Grimmia atrata*
fig. 2 ..... *unicolor*

April 1st 1818.

2771. (Fig. 1.)

GRIMMIA atrata.

Dark-coloured Grimmia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Peristome* simple, of 16 entire or perforated, rarely cleft, equidistant teeth. *Calyptra* mitriform.

SPEC. CHAR. Stems sparingly branched. Leaves erecto-patent, lanceolate-subulate, keeled, bluntish, nerved almost to the apex. Capsule elliptic-oblong. Lid conical, obtuse, subrostrate.

SYN. Grimmia atrata. *Hook. Musc. Exot. t.* 100. *Brid. Bryol. Univ. v.* 1. 184. *Hook. Engl. Fl. v.* 5. 27.

AN alpine species, found in August 1828, near the summit of Snowdon, by Mr. Wilson. It is also understood to have been found in Glen Callater, by Dr. Greville.

Stems clustered, an inch long and upwards. Leaves dark green, almost black when old, imbricated, moderately spreading, somewhat twisted round the stem after having been dried, channeled and keeled, the margin entire and slightly thickened, the nerve certainly vanishing below the apex, which is angular, not rounded as in the next species. Fruitstalk thick, straight, not twisted, a quarter of an inch long. Capsule nearly erect. Teeth of the peristome *reddish* (yellowish according to *Musc. Exot.*), incurved. Operculum very obtuse, obscurely beaked, about one fourth of the length of the capsule. Calyptra in all our specimens dimidiate,

departing from the character proper to the genus, which is not easily kept separate from *Weissia.*

The keeled leaves and short operculum easily distinguish this species from *Grimmia unicolor*, which we shall next describe.—W. W.

2771. (Fig. 2.)

GRIMMIA unicolor.

Dark rigid Grimmia.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal. *Peristome* simple, of 16 entire or perforated, rarely cleft, equidistant teeth. *Calyptra* mitriform.

SPEC. CHAR. Stems branched. Leaves erecto-patent, lanceolate-subulate, very obtuse, rigid, the broad nerve reaching to the apex. Capsule ovate. Lid conical, rostrate.

SYN. Grimmia unicolor. *Grev. Scot. Crypt. Fl. t.* 123. *Hook. & Tayl. Musc. Brit. ed.* 2. 72. *Brid. Bryol. Univ. v.* 1. 182. *Hook. Engl. Fl. v.* 5. 27.

FIGURED from specimens gathered by Mr. Thomas Drummond on rocks above Bach-na-gairn, Clova, and kindly communicated by G. A. W. Arnott, Esq.

Stems clustered, about two inches long. Leaves nearly erect, less spreading and much narrower than those of the last species, rounded at the back, dilated towards the base, the upper part almost linear and entirely occupied by the broad thick nerve, rounded and very obtuse at the apex, the margin entire and slightly inflexed, so that the leaf becomes slightly channeled on the upper surface. Fruitstalk very short, not rising much beyond the leaves. Capsule ovate, nearly erect, smooth. Peristome red, incurved. Lid half as long as the capsule. We have not seen the calyptra: it is said by Dr. Hooker to be "at first truly mitriform, afterwards bursting on one side by the enlargement of the

capsule, and it thence becomes dimidiate*:"—vide *Musc. Brit. ed. 2. p. 73.*—W. W.

* This certainly occurs in *Grimmia atrata*; Bridel, however, states that the calyptra of *G. unicolor* acquires *numerous* fissures, one larger than the rest, and thus becomes spuriously dimidiate. If the structure of the calyptra be of importance, it is natural to suppose that the features will be constant and universal; otherwise it is not easy to understand in what mode *Weissia* can be kept separate from *Grimmia*; for not only in that genus, but in all other Mosses, the calyptra is at one period or another *mitriform*, the fissure being merely the result of forcible distention. In those cases where numerous fissures are *usually* present, the calyptra may indeed be termed mitriform, without any laceration of the principle on which the distinction has been made to rest; but it is worthy of remark that the condition of the calyptra has not any absolute relation to disproportion of the parts; for in *Gymnostomum pyriforme*, and in *Funaria hygrometrica*, it is, in an early stage, very large and inflated, while that of *Anictangium imberbe* and of several other Mosses, is, though permanently mitriform, only large enough to cover a part of the operculum. Bridel has attempted to establish a rule for ambiguous appearances (vide *Bryol. Univ. v.* 1. 183.); but his observations, though differently intended, rather show that the calyptra is of less consequence as a criterion than has been generally supposed, the fissile property of this part being more the result of accident, if we regard the *number* of fissures only, than of inherent tendency, and no sutures or other prognostic being previously visible, unless perhaps where the calyptra is plicate, a feature which, if duly attended to, may perhaps remove the difficulties which are supposed to exist.—W. W.

July 1st 1833

CAREX stictocarpa.

Dotted-fruited Carex.

MONŒCIA Triandria.

GEN. CHAR. *Flowers* diclinous, in a closely imbricated spike. *Scales* single-flowered. Male: *Perianthium* none. *Stamens 3.* Female: *Perianthium* monophyllous, capsular, persistent, contracted at the top, awnless at the base. *Stigmas 2* or *3.* *Nut* included within the enlarged perianthium.

SPEC. CHAR. "Fertile catkins two, ovate, stalked. Scales pointed. Sheaths scarcely any. Fruit obovate, obtuse, pointless, finely dotted."

SYN. Carex stictocarpa. *Sm. Engl. Fl. v. 4.* 127.

"ROOT creeping extensively, with brown scaly runners, much like *C. hirta.* Stem erect, about a foot high, triangular, smooth, leafy in its lower half. Leaves erect, linear-lanceolate, pointed, flat, the breadth of *C. hirta,* but quite naked and smooth, except a roughness at the edges and keel near the extremity; the under surface rather glaucous; the sheaths long, close and abrupt. Bracteas leafy, as tall as the stem, very slightly or not at all sheathing at their base, destitute of auricles. Barren catkins 2, rather distant, erect, linear, obtuse, the upper, or largest, near an inch long; scales obovate, obtuse; pointless, dark brown, with a pale rib. Fertile catkins 2, not more distant than the barren ones, ovate, not half an inch long, erect, each on a stout triangular stalk about its own length; scales ovate, dark brown, each with a very strong, green

midrib, ending in a shortish, stout, rather blunt point, or awn. Stigmas 3, almost sessile. Fruit shorter than the scales, roundish obovate, somewhat triangular, a little compressed, greenish or tawny, smooth, all over finely besprinkled with minute, brown, or reddish, depressed dots; its termination abrupt, without any beak. Seed not observed.

"In general appearance this plant much resembles *C. nutans* of Host, *Willd. v.* 4. 299; but the fruit of that species is ovate, tapering into a broad, deeply cloven, beak; and the scales of the barren as well as fertile catkins are more or less awned. The fruit of ours rather agrees with that of *C. rigida*, or *recurva*, and its habit perhaps with *pulla*, *globularis*, and their allies; but the 2 very distinct barren catkins, however exceptionable that character may occasionally prove, oblige us to refer *C. stictocarpa* to the present section, which its agreement, in some points, with *hirta* and *filiformis* may further justify. I have seen but a single specimen."

Such is the description of this plant in the *English Flora*; and notwithstanding that its claims to the rank of a species are supported by the authority of the eminent author of that work, and my late father, I am fully satisfied that it is not entitled to be regarded in any other light than as an alpine form of *C. recurva*, the most variable of all the *Carices*, with the exception perhaps of *cæspitosa*, to which species the *angustifolia* of Smith (probably identical with the *aquatilis* β *nardifolia* of Wahlenberg,) must be reduced.—D. Don.

July 1st 1833.

CAMPANULA persicifolia.

Peach-leaved Bell-flower.

PENTANDRIA Monogynia.

GEN. CHAR. *Corolla* campanulate or subrotate, with 5 broad and shallow segments. *Filaments* dilated at the base. *Stigma* 2—5-fid. *Caps.* 2—5-celled, bursting laterally, rarely at the extremity.

SPEC. CHAR. Glabrous. Stem rounded, few-flowered. Root-leaves oblong or obovate, stalked, crenate; those of the stem linear-lanceolate, subsessile. Calycine segments entire. Corollas spreading.

SYN. Campanula persicifolia. *Linn. Sp. Pl.* 232. *Don, Herb. Brit.* 180. *Hook. Fl. Scot.* 74. *Sm. Engl. Fl. v.* 1. 290. *Hook. Brit. Fl. ed.* 2. 114.

NOT having an opportunity of seeing a recent native specimen of *Campanula persicifolia*, we have made our drawing from that published by Mr. Don, in his Fasciculi of dried plants, as gathered in woods near Cullen in Scotland, the only authority indeed for its being indigenous. In gardens it is extremely common, often varying with white and often with double flowers.

Root somewhat creeping, about the thickness of a crow's or a raven's quill. Stem generally simple, erect, 1—2 feet high, glabrous, as is every part of the plant, rounded, distantly leafy. Leaves slightly serrated: those from the root more crowded, but soon withering, oblong or even obovate, gradually tapering into a petiole: those of the stem lanceolate or linear-lanceolate, sessile, smaller upwards. Flowers solitary, erect, and terminal, or sometimes

with one or two lateral pedunculated blossoms besides, from near the extremity. Calyx of 5 lanceolate entire segments, and spreading. Corolla broadly campanulate, of a brilliant blue, much expanded at the mouth.—W. J. H.

July 1st 1833.

ERICA mediterranea, β.

Mediterranean Heath, var. β.

OCTANDRIA Monogynia.

GEN. CHAR. *Calyx* of 4 leaves, inferior. *Corolla* of one petal, campanulate, often ventricose. *Capsule* 4-celled, 4-valved; *dissepiments* from the middle of the valves.

SPEC. CHAR. Anthers without awns, and as well as the style exserted. Corolla narrow, urceolate. Bracteas about the middle of the peduncle. Calyx coloured. Flowers axillary. Leaves 4 in a whorl.

SYN. Erica mediterranea. *Linn. Mant.* 229. *Thunb. Diss. n.* 41. *Ait. Hort. Kew. ed.* 2. *v.* 2. 367. *Curt. Bot. Mag. t.* 471. *Duby, Bot. Gall. v.* 1. 318.

Var. β. flowering branches and style shorter.
Erica mediterranea. *Hook. Brit. Fl. ed.* 2. 176.

IT is not a little remarkable that notwithstanding the limited extent of the British Islands, and the number of zealous botanists they have produced, two of our most remarkable native plants, the most beautiful of a highly beautiful genus, and covering the ground as they do to an extent of some acres,—should, till within these few years, have remained undiscovered, and unknown save to the shepherd and the illiterate peasant of the neighbourhood. We allude to the *Erica ciliaris* (*t.* 2618. of this Supplement), and the subject of the present plate, which was detected by our valued friend J. T. Mackay, Esq. in September 1830, growing on the sides of Urrisbeg Mountain, Cunnamara, Ireland. It was not then in flower; but Mr. Mackay has since (April 1833,) favoured us with numerous flowering specimens, from one of which the accompanying figure was made.

It is, we believe, rightly referred by its discoverer to the *E. mediterranea*; still it must be confessed that it partakes nearly as much of the character of *E. carnea*,—two plants

which Mr. Curtis (*Bot. Mag. t.* 11.) at one time was not disposed to consider specifically distinct; but he afterwards altered his opinion, and under *E. mediterranea* (*Bot. Mag. t.* 471.) pronounced them to be distinct, observing, "The *E. carnea*, if left to itself, is low and spreading, the *mediterranea* tall and upright; the flowers in the *mediterranea* are shorter and more ovate, and have a degree of fragrance wanting in those of the *carnea*; the filaments do not project so far, but the style farther; the *carnea* blossoms at least a month earlier than the *mediterranea*:—to these differences may be added that the *carnea* is perfectly hardy, while the *mediterranea* is liable to be killed in severe seasons, and is therefore usually kept in the greenhouse." Now our plant has the more upright habit and the shorter corolla of *E. mediterranea*, but the much less protruded style, and we may add, much shorter flowering branches of *E. carnea*: so that it has nearly as great a claim to rank with one as with the other.

The only native specimen we possess, in our herbarium, of a Heath under the name of *E. Mediterranea* is from Sieber, gathered at "Therisso"; but its broadly campanulate corolla, and flowers confined to the very extremity of the branches, prove it to be a very different species from that of Curtis, which is universally quoted as the true plant. Under these circumstances we have thought it best to consider our plant as a variety of *E. mediterranea*.

It constitutes a low shrub, with rather dense and nearly upright, rigid, but slightly wavy branches. Leaves usually quaternate, spreading horizontally, except the upper ones, which are almost erect, glabrous, plane above, almost half terete beneath, with a pale excavated central line. Petiole very short, reddish. Flowers drooping, numerous, from the axils of the leaves, thus forming rather short but dense leafy *racemes*. Pedicels red, with about 3 bracteas near the middle. Calyx rose-coloured, of 5 appressed, lanceolate, obtuse leaves, greenish at the base, scarcely half as long as the corolla. Corolla flesh-colour, deeper upwards, between urceolate and cylindrical, with 4 short and blunt segments. Filaments dilated upwards, nearly as long as the corolla. Anthers of 2 erect, oblong, awnless, dark brown cells, which are protruded beyond the limb. Germen green. Style red, longer than the stamens.

E. mediterranea, upon the Continent, is said by Willdenow to inhabit the South of Europe; by Aiton, to be a native of Portugal. It is remarkable that DeCandolle, in the *Flore Françoise*, describes *Erica carnea*, but not *mediterranea*; whereas in the *Botanicon Gallicum* of the same author and Duby, the *Erica mediterranea* is described, and *carnea* is omitted.—W. J. H.

July 1st 1853.

EPIPACTIS purpurata.

Purple-leaved Helleborine.

GYNANDRIA Monandria.

GEN. CHAR. *Lip* very concave at the base, the extremity undivided or three-lobed, the middle lobe large, and, as it were, jointed. *Pollen* farinaceous.—*Brown.*

SPEC. CHAR. Leaves ovate-lanceolate. Bracteas linear, all twice as long as the flowers. Lip shorter than the calyx, entire. Germen downy. —*Smith.*

SYN. Epipactis purpurata. *Sm. Engl. Fl. v.* 4. 41. *Hook. Brit. Fl.* 378; *ed.* 2. 374.

THIS interesting and singular plant was discovered in Worcestershire, in 1807, by the Rev. Dr. Abbott, who considered it as parasitical, and communicated a specimen of it to the late Sir James E. Smith, who has designated it in his *English Flora*, *E. purpurata*, from the red purple colour of its leaves. Dr. Abbott very justly observes, that the "whole plant when fresh glows with a beautiful red lilac colour," which peculiarity will readily distinguish this species from any other of the genus in every stage of growth.

I have found several patches of this plant growing under the shade of a clump of lime-trees and hazel-bushes in the woods at Woburn Abbey, and have uniformly observed it to retain its red purple lilac hue, which, previous to the maturity and development of the flowers, is even much more conspicuous on every part of the plant than represented on the annexed plate.

Root more fleshy, thicker, and growing much deeper in the ground, than any other species of this genus that I am acquainted with. Stem from 1 to 2 feet high, round, and pubescent. Lower leaves ovate-lanceolate, sheathing at the base; upper sessile, linear-lanceolate, from 2 to 3 inches long, the veins and margins covered with a slight rough pubescence. The leaves are considerably smaller and of a more delicate texture than in any of the varieties of *E. latifolia*, of which there appear to be three different varieties growing in the Woburn woods, all evidently very distinct from the *E. purpurata*. Spike from 4 to 6 inches in length, drooping before the flowers expand; but afterwards assuming an erect position. Bracteas linear, acute, horizontal with the spike, the lower above twice the length of the flowers, the upper shorter. The bracteas are described by Sir James E. Smith as being all longer than the flowers, which they appear to be previous to the expansion of the blossoms, the period of growth when Sir James's description was taken; the upper are, however, when at maturity, shorter than the flowers. Perianth spreading, extending beyond the petals. Flowers of a yellow green colour, tinged with pink, expanding in August.—J. Forbes.

1
2
Aspidium
angulare.
July 1st 1828.

ASPIDIUM angulare.

Angular-leaved Shield-fern.

CRYPTOGAMIA Filices.

GEN. CHAR. *Clusters of fructification* roundish, scattered. *Involucre* orbicular, fixed by the centre, or orbiculari-reniform, and fixed at the sinus.

SPEC. CHAR. Frond doubly pinnate; leaflets ovate, bluntish, stalked, fringed with bristly serratures, each leaflet with a lateral lobe at the base; the lowermost elongated, partly pinnatifid. Stalk scaly. Ribs all shaggy. Cover orbicular, umbilicated.—*Smith.*

SYN. Aspidium angulare. *Willd. Sp. Pl. v.* 5. 257. *Sm. Engl. Fl. v.* 4. 291. *Hook. Brit. Fl. ed.* 2. 441.

A. aculeatum β. *Smith, Fl. Brit.* 1122.

A. aculeatum *var.* 2. *Dr. Johnston, Fl. of Berwick, v.* 2. 12. *pl.* 3. *f.* 2.

Polypodium n. 1712 γ. *Hall. Hist. v.* 3. 16.

Filix mas aculeata nostras, alis expansis, muscosa lanugine aspersa. *Pluk. Almag.* 151. *Phyt. t.* 180. *f.* 1.

THIS Fern has often been looked upon as a variety either of *A. lobatum* or *A. aculeatum*, two species which have been confounded, or mistaken for each other. Kitaibel (in *Willd. Sp. Pl. loc. cit.*) appears first to have raised it to the rank of a species. Smith in the *English Flora* has admitted it to that distinction; and Dr. Hooker, rather than unite the three, has followed the same course; which appears the more proper because each species has its appropriate varieties.

Sir James Smith says, "Having seen no specimen of

Willdenow's plant, I cannot be certain that we mean the same thing," but from the description it is clear that if Willdenow's be not exactly the same, it is only a slight variety. The specimen selected for a figure is one from Pease-bridge Dean in Berwickshire, and was kindly communicated by the author of that elegant work the *Flora of Berwick-upon-Tweed.* It should appear that neither it nor the *A. aculeatum* grows further north, while the *A. lobatum** is not rare in Scotland. *A. angulare* also grows in Devonshire and various other parts of England, and in Ireland. Dr. Johnston has received it from Ennis in the county of Clare. We regret that the figures of the two analogous species in the *English Botany*, *t.* 1562 & 1563, are not more characteristic; in both of them the leaflets are too short, except in the magnified figures.

The following description is given from the *British Flora*; it agrees perfectly with the specimens before us, and cannot be improved. *A. angulare* "is softer and more delicate in texture as well as more shaggy than" *A. aculeatum.* "The leaflets are smaller, more numerous, blunter and rounded at the extremity, though tipped with a soft bristly point, and each of them, even to the smallest, has a broad conspicuous lobe at the base of the upper margin; the lowest of all, at the upper edge of each main leaf is half as long again as its next neighbour, more strongly serrated, and in its lower part generally pinnatifid. All the lobes and serratures end in soft bristly points. Stalk and principal rib densely covered with scales, which are narrower in proportion as they are higher up, those on the partial ribs or on the leaflets occasionally being almost capillary. Masses (of capsules) numerous and crowded. Cover orbicular, for the most part entire, with a central depression. The outline of the whole frond is rather broader than *A. aculeatum*, and the more copious, distinct, rounded, auricled leaflets give the whole a rich and elegant aspect."—J. D. C. S.

Fig. 1. represents a pinnule of the typical form; fig. 2. a pinnule of the variety with the lower pinnules again pinnated.

* This species (named by Hudson from the large auricles or lobes at the bases of the *pinnæ*, not of the *pinnulæ*,) is distinguished by the decurrent bases of the leaflets, or *pinnulæ*, and their elliptic form.

Equisetum Drummondii.

October 1st 1843.

EQUISETUM Drummondii.

Blunt-topped Horse-tail.

CRYPTOGAMIA Equisetaceæ.

GEN. CHAR. *Fructifications* terminal, in spikes or catkins, consisting of peltate, polygonous scales, on the underside of which are from 4 to 7 *involucres*, which open longitudinally and contain numerous globose bodies (*capsules*?), enfolded by 4 filaments, clubbed at their extremities, (which some take for *stamens*).

SPEC. CHAR. Frond very obtuse at the extremity. Sterile stem (especially upwards,) scabrous with prominent points, and with about 20 striæ; teeth of the sheath appressed. Branches simple, patent. Fertile stem without branches; its sheaths approximate, appressed, with subulate teeth.

SYN. Equisetum Drummondii. *Hook. Brit. Fl. ed.* 2. 451.

FOR this addition to the species of *Equisetum* we are indebted to Mr. Thomas Drummond, who found it on the banks of the Isla and Esk in Forfarshire, extending up the valleys almost to the sources of those rivers. The flowering stems, which appear before the sterile ones, are in perfection in April. Its nearest affinity is doubtless with *E. arvense* (*Engl. Bot. t.* 2020.), but it is abundantly distinct. Its colour is greener and less glaucous, its stems rougher with closely set raised points, its angles and branches much more numerous; and the whole barren frond is singularly blunt in its outline, or circumscription, at the extremity, by which it may be at once known from *E. arvense*. The

sheaths, though paler at the base, have blacker and more prominent ribs upwards, and they are so close as almost to imbricate each other. Their teeth also are more numerous when they separate into their proper number.

We are indebted to Mr. Wilson, of Warrington, for the specimen here figured.—W. J. H.

Gymnostomum cæspititium.

October 1st 1833.

GYMNOSTOMUM cæspititium.

Minute tufted Beardless-Moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Fruitstalk* terminal, slender, rigid. Mouth of the *capsule* naked, or, at most, in an early stage closed with a more or less complete horizontal membrane. *Calyptra* dimidiate.

SPEC. CHAR. Stems elongated, more or less branched. Leaves lanceolato-subulate, canaliculate, obscurely nerved, very straight even when dry, those of the perichætium much longer than the turbinate quite furrowless capsule.

SYN. Gymnostomum cæspititium. *Web. et Mohr, Fl. Cr. Germ.* 77 & 453. *Hook. Engl. Fl. v.* 5. 6.

Anictangium cæspititium. *Schwægr. in Hedw. Suppl. v.* 1. 35. *t.* 12.

Schistidium cæspititium. *Brid.—Nees & Hornsch. Bryol. Germ.* 94. *t.* 8. *f.* 2.

FEW spots in Britain have been more generally visited by the lovers of alpine botany than the rough and craggy portion of the summit of Ben Lawers, the well-known station for *Saxifraga cernua*, *Verrucaria Hookeri*, and other rarities, and by none perhaps more frequently than ourselves. Yet till within the last few years, (the year 1830,) the little Moss here figured had entirely escaped our notice; nor should we then have detected it but for the bright and glossy capsules nestling among the very inconspicuous yet dense foliage. It was in perfection in June and July, and its favourite situation is on the scanty soil intervening

between the stratification of the perpendicular rocks. Its colour is a brownish green. Stems scarcely more than half an inch long. Leaves decidedly nerved, even those of the perichætium, which are the largest of all and the most broad and pellucid at the base. The nerve is narrow below, gradually broader upwards till it occupies the whole diameter of the leaf at the narrowed apex. Capsule turbinate, on a short fruitstalk. Lid obliquely rostrate. Calyptra certainly dimidiate; whence it has been incorrectly removed from *Gymnostomum* by some authors.

The specimen was obligingly sent by Mr. Wilson.

W. J. H.

NITOPHYLLUM Gmelini.

Marginal-fruited Nitophyllum.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* plane, delicately membranaceous, rose-coloured, reticulated, wholly without veins, or with very slight vague ones towards the base. *Fructification,* hemispherical capsules imbedded in the substance of the frond, and ternate granules forming distinct scattered spots.—*Grev.*

SPEC. CHAR. Stem short, passing into a frond with a roundish outline deeply cleft; the main segments broadly wedge-shaped, vaguely subdivided, faintly marked with vague flexuose veins; the margin entire. Spots of ternate granules irregularly marginal.—*Grev.*

SYN. Nitophyllum Gmelini. *Grev. Alg. Brit.* 82. *Hook. in Sm. Engl. Fl. v.* 5. 288.
Delesseria Gmelini. *Lamour. Ess.* 36.
Fucus laceratus γ. *Turn. Hist. Fuc. v.* 1. 153.

"ROOT a small disk. Stem two lines to half an inch in height, simple, or divided into two to four branches, each expanding into a roundish semicircular or broadly wedge-shaped frond, one to four inches in height, cleft more than half-way down into two to five wedge-shaped segments, which are again divided, but not so deeply, very unequally and irregularly, the summits always obtuse. The margins are entire, and mostly quite even: the reticulated substance is traversed from the base to the extremity with obscure often pale veins, always perceptible when fresh, but some-

times almost disappearing in dried specimens. Fructification: 1. capsules not so large as turnep-seed, dark red, hemispherical, scattered remotely over the surface of the frond; 2. spots of ternate granules, irregular, often confluent, forming interrupted lines a little within the margin. Substance thin and membranaceous, but firmer and more elastic than the following (*N. laceratum*), cartilaginous in the stem. Colour a purplish rose-red."—Such is the character given by Dr. Greville of this beautiful plant, which has long been distinguished by Mrs. Griffiths, who finds it abundantly on the south coast of Devon, and from whom the specimen represented at fig. 2. was received, through the kindness of Mr. Borrer. Miss Hill finds it at Ilfracombe; Dr. Drummond at Larne near Belfast. A state of this plant, as Mr. Borrer considers it, gathered on Seaford beach in August 1832, is given at fig. 1.; but to us it appears too near *F. laceratus* (*Engl. Bot. t.* 1067). Dr. Greville observes that the Irish specimens are twice the size of the English ones.

Specimens of this and other rare southern Algæ will doubtless appear in the "Algæ Danmonienses, or Dried Specimens of Marine Plants, principally collected in Devonshire;"—prepared by Mary Wyatt, Torquay, to whom Mrs. Griffiths has kindly given her valuable assistance in naming the species.—W. J. H.

Grateloupia filicina?

October 1st 1832.

GRATELOUPIA filicina.

Fern-like Grateloupia.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* cartilaginous, membranaceous, plane, somewhat pinnated with branchlets, or fringed with foliaceous processes. *Fructification,* minute aggregated tubercles, furnished with a pore and containing a mass of free elliptical or roundish seeds.—*Grev.*

SPEC. CHAR. Frond linear, attenuated, simple, undivided, irregularly pinnated with ramuli which are attenuated at each extremity.—*Grev.*

SYN. Grateloupia filicina. *Ag. Sp. Alg. v.* 1. 224. *Grev. Alg. Brit.* 151. *t.* 16. *Hook. in Sm. Engl. Fl. v.* 5. 306.

Delesseria filicina. *Lamour. Ess.* 38.

Fucus filicinus. *Wulf. in Jacq. Coll. v.* 3. 137. *t.* 15. *f.* 2. *Turn. Hist. Fuc. t.* 150.

FOR this interesting addition to the British Algæ we are indebted to Miss Cutler, who finds it among other submarine productions, and on rocks, at Sidmouth and Ilfracombe, producing fructification in the autumnal months. It is supposed to be perennial.

Fronds 3—6 inches in length, tufted, linear, attenuated, compressed, sometimes irregularly divided, and bearing numerous linear and attenuated pinnæ; these are sometimes distichous, sometimes secund, occasionally opposite. Fructification consisting of small tubercles, clustered together

in one part of the frond, or pinnæ, and furnished with a pore, or depression, at the extremity. The colour is a deep purplish red; the substance is firm and horny. Dr. Greville remarks that the plate given by Mr. Turner of this species will be of little assistance to the British botanist in determining our native plant: but we have had occasion to observe, in the *British Flora*, that it well agrees with numerous specimens which we possess from the Mediterranean, and which we believe to be identical with the original plant of Wulfen. So that it is a question with us, whether the plant of our shores ought not to be considered distinct from the foreign specimens, which are of an olive green colour when dry, are copiously once or twice pinnated, and of a very lubricous texture, so as to adhere firmly to paper.—W.J.H.

Bryopsis hypnoides.

October 1st 1823.

BRYOPSIS hypnoides.

Hypnum-like Bryopsis.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* membranaceous, filiform, tubular, cylindrical, glistening, branched; the branches imbricated or distichous and pinnated, filled with a green minutely granuliferous fluid.—*Grev.*

SPEC. CHAR. Frond slender, very much branched; the branches long; the ramuli capillary, irregularly inserted, somewhat erect, the lower ones elongated.—*Grev.*

SYN. Bryopsis hypnoides. *Lamour. in Journ. Bot.* 1809. 135. *t.* 1. *f.* 2. *Grev. Alg. Brit.* 188. *Hook. in Sm. Engl. Fl. v.* 5. 318.

Bryopsis arbuscula. *Ag. Syn. Alg. v.* 1. 451.

So much does this plant resemble the *Bryopsis plumosa*, already given at *t.* 2375 of this work, that Dr. Greville, whose authority is of great weight in this family, scarcely believes it to be specifically distinct, depending for its character upon the nearly erect and irregular ramuli. The specimen here figured was communicated by Mr. Borrer from Tor Abbey, Devon, where it was found by Mrs. Griffiths. In Scotland it appears not to be unfrequent, having been detected at Preston Pans, by Dr. Greville; at Southerness, Kirkcudbright, by Sir William Jardine, Bart.; and at Appin, by the late Capt. Carmichael. It is of annual duration, and in perfection in the summer and autumn months.

W. J. H.

May 1st 1824.

SCIRPUS Savii.

Savi's Club-rush.

TRIANDRIA Monogynia.

GEN. CHAR. *Spike* of numerous *flowers*, all perfect. *Glumes* imbricated in every direction, expanded, concave, uniform, except 1 or 2 occasionally. *Corolla* none. *Filaments* flat. *Anthers* linear. *Style* neither jointed nor dilated at the base, deciduous. *Stigmas* 2 or 3, downy. *Seed* with or without rough bristles beneath; often pointed. —*Sm.*

SPEC. CHAR. Stems round, leafy below. Spikes 1—3, terminal, shorter than the unequally two-leaved involucre. Fruit subglobose, obtusely triquetrous, rough with slightly elevated points.

SYN. Scirpus Savii. *Spreng. Syst. Veget. v.* 1. 207. *Bertoloni Fl. Ital. v.* 1. 288.

Isolepis Saviana. *Rœm. et Sch. Syst. Veget. Mant. 2. v. 2. 63. Dietr. in Willd. Sp. Pl. ed. 6. v. 2.* 100.

Scirpus filiformis. *Sav. Fl. Pis. v.* 1. 47.

Scirpus setaceus. *Riv. Bern. Cent.* 1. 72. (excl. plur. syn.)

Isolepis Hibernica. *Schmidt MS.* (apud Dom. Shuttleworth.)

β. Spikes solitary, with a shorter involucral bractea.

Scirpus acicularis. *Sealy in herb. nost.*

ROOT fibrous. Culm very slender, erect, 8—10 inches to a foot in height, several times branched in a dichotomous manner at the base, and, below only bearing a few leaves, much shorter and slenderer than the culms, otherwise resembling them, and terminating rather long, membranaceous sheaths. Spikelets ovate, 1—3, terminal (unless the larger leaf of the involucre be considered a portion of the culm), subtended by a 2-leaved involucre, of which one leaf is about twice longer than the spikelets, setaceous, green, with a broad membranaceous margin on each side at the

base; the other, placed opposite to it, is much shorter, broader, almost wholly membranaceous and resembling an outer glume or scale of the flower, only more distinctly terminated with a short green mucro. Glumes rather laxly imbricated, ovate, entire, membranaceous, pale, with the nerve green above and ending in an obscure green mucro. Stamens 3. Stigmas 3. Setæ none. Fruit globose, inclining to obovate, very obtusely triquetrous, shortly mucronate, dotted with small elevated points placed in lines, but not in the least costate, dull brown when ripe, and apparently covered with a thin scurf, or skin. The var. β differs in the smaller size, constantly single spikelet, and shorter involucre.

For directing our attention to the characters which distinguish this species of Club Rush from its congeners we are indebted to R. J. Shuttleworth, Esq. of Château d'Erlach, Lac de Bienne, Switzerland, who found it in wet bogs during July, 1832, at Renoyle in the West of Ireland, and sent it to us as a species certainly distinct from *S. setaceus*. On his late visit to England he obligingly communicated to us further remarks on the species and a drawing of the fruit by Dr. Schmidt with the name "*Isolepis Hibernica*, Schmidt;" but at the same time with the remark that it was probably the *Isolepis Saviana* of Rœm. & Sch., a species hitherto considered to be exclusively Italian; and on comparing our specimens with the *Scirpus Savii*, in our herbarium, from Professor Tenore, we find them precisely to accord: thus we have another interesting addition to the list of those Southern European plants which are natives of Ireland. If carefully examined, none of our species of the genus is more readily recognised; but we think it probable that a hasty glance would induce many botanists to pass it by as either *Scirpus* (*Isolepis*) *setaceus*, which Mr. Shuttleworth's specimens most resemble, or *Scirpus* (*Elæocharis*) *acicularis*, to which the late Mr. Sealy's specimens have so much affinity that they are so named in his herbarium now in my possession. The fruit is indeed quite different from both. Mr. Sealy detected his specimens in the county of Cork, and no doubt it will be found abundantly elsewhere in Ireland.

While this sheet is in the press we find among specimens of "*Scirpus setaceus*," received from W. Wilson, Esq., that those from "Anglesea" are identical with our *S. Savii*, and the same as he described in the *Botanical Miscellany* (*v. 2. p.* 134.) as having the "seed nearly round, scarcely triangular, not furrowed, reddish brown, granulated, covered with a closely adhering skin."—W. J. H.

May 1st 1834.

GALIUM cinereum.

Grey Spreading Bedstraw.

TETRANDRIA Monogynia.

GEN. CHAR. *Cor.* of one petal, flat, superior. *Seeds* 2, roundish.

SPEC. CHAR. Leaves six or eight in a whorl, linear, bristle-pointed, with marginal prickles, all pointing forward. Stem weak, much branched, smooth. Fruit smooth. Corolla taper-pointed.

SYN. G. cinereum. *Allion. Pedem. v.* 1. 6. *t.* 77. *f.* 4. *Willem. Stell.* 54. *Sm. Engl. Fl. v.* 1. 203. *Lindl. Syn.* 129. *Hook. Brit. Fl. ed.* 2. 65.
G. diffusum. *Hook. Scot. v.* 1. 52.

AMONG the few plants admitted into the *English Flora* by Sir J. E. Smith since the 36th volume of *English Botany* was completed, are several of which we despair of obtaining fresh specimens; among these are two species of *Galium*, the subjects of this and the following pages, and which we have been under the necessity of figuring, by permission, from the dry plants in Sir James's herbarium, lately purchased by the Linnean Society. Our inability to examine the fresh plants has also induced us to give the following descriptions, in Sir James's own words, from his *English Flora*. The specimen was collected "on the banks of the river Leith, near Slateford, three miles from Edinburgh," by the late Mr. G. Don.

"Stems loosely spreading, 1½ or 2 feet high, repeatedly branched, leafy, smooth, pale, or somewhat glaucous, quadrangular, one or two of the angles sometimes doubled.

Leaves 8 in a whorl on the main stem; 6 on the branches, linear, scarcely at all lanceolate, destitute of veiny reticulations, smooth on both sides, the edges rough, especially towards the point, with sharp, shallow serratures, or close bristles, hardly more than a simple, strictly marginal row, pointing forwards. Panicles terminating the stem and upper branches, 3-forked, corymbose; the upper ones aggregate. Stalks quite smooth. Corolla white, larger than in *G. erectum*, with horizontal segments, each tipped with a short, taper, not bristly point, various in length and direction. Stigmas globular, large. Fruit smooth or slightly granulated."

The points in which this differs from *G. erectum*, its next akin, appear to be the smooth stem, the smaller number, linear form, and smoother margins of the leaves, which also are free from the reticulations conspicuous in *G. erectum*, the less dense inflorescence and the less elongated points of the segments of the corolla. "Experience must prove how far the differences above indicated are constant," and we hope the figure given from the original specimen will assist in the inquiry.—J. D. C. S.

2784
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GALIUM aristatum.

Bearded Bedstraw.

TETRANDRIA Monogynia.

GEN. CHAR. *Cor.* of one petal, flat, superior. *Seeds* 2, roundish.

SPEC. CHAR. Leaves six in a whorl, stalked, lanceolate, flat, reticulated with veins, bristle-pointed, with minute, marginal prickles pointing forward. Stem much branched, spreading, smooth. Seeds smooth, kidney-shaped, separated. Corolla taper-pointed.

SYN. G. aristatum. *Linn. Sp. Pl.* 152. *Sm. Engl. Fl. v.* 1. 203. *Lindl. Syn.* 129. *Hook. Brit. Fl. ed.* 2. 66.

G. foliis pluribus lanceolatis, pedunculis in summo caule floriferis. *Van Royen Prod.* 256.

G. album linifolium. *Barrel. Ic. v.* 1. 12. *t.* 356.

Rubia lævis linifolia, floribus albis. *Bocc. Mus. v.* 1. 83. *t.* 75.

DRAWN from specimens collected by Mr. G. Don in Angusshire and preserved in Sir J. E. Smith's herbarium. "The stems are numerous, a foot high, upright, with copious spreading branches, square, very smooth. Leaves six in a whorl on the main stem, and often on the branches, though sometimes but four or five, the largest above an inch long, on short, broad stalks, elliptic-lanceolate, flat, pliant, deep green on both sides, with many interbranching veins, smooth except the edges, which are very minutely prickly.

Flowers white in terminal, forked, aggregate, compound panicles, with perfectly smooth, slender but not capillary stalks. Segments of the corolla spreading, each tipped with a taper point of its own substance, not with a real bristle. Seeds becoming kidney-shaped as they ripen, with a central vacancy, smooth or slightly granulated."—*Smith.*

Sir J. E. Smith in some following observations shows this to be the true *G. aristatum* of Linnæus, and distinct from *G. sylvaticum*, whose "fruit is a small double globe." —J. D. C. S.

May 1st 1824.

MENTHA crispa.

Curled Mint.

DIDYNAMIA Gymnospermia.

GEN. CHAR. *Cal.* 5-cleft. *Cor.* nearly regular, 4-cleft, its broadest segment notched. *Stamens* erect, distant.

SPEC. CHAR. Whorls spiked, crowded, lower ones distinct. Pedicels rather smooth. Calyx sparsely hairy. Adult Corolla smooth, the upper lip 2-lobed. Style exserted. Leaves subsessile, cordate, rugose, crisped at the margin with long pointed teeth, hairy, especially beneath. Stem straight, sometimes branched, hairy, hairs reflexed.

SYN. Mentha crispa. *Linn. Sp. Pl.* 805. *Stokes, Bot. Mat. Med. v.* 3. 317. *Nees ab Esenb. Pl. Med. Ic.* fide *Benth.*

M. aquatica γ. crispa. *Benth. Labiata.* 177.

M. foliis rugosis, brevissime petiolatis, verticillis spiratis. *Hall. Hist. Stirp. Helvet. v.* 1. 100.

I HAVE seen this species of Mint growing on the banks of the Wooler Water, near Haughhead, and on the banks of a rivulet leading into the same water above Longlyford, at the bottom of the highest mountain of the Cheviot range, Northumberland, for some years, but considered it to be in a diseased state. However, observing it every year the same, I supposed it a Mint new to the British Flora. In 1833 I shewed it to my friend Dr. Johnstone, of Berwick-on-Tweed, the author of the *Berwickshire Flora*, who on a careful examination declared it to be the *Mentha crispa* of Linnæus. Since that, through the kindness of Mr. Bennett, of the British Museum, I have had an opportunity of comparing my specimens with those in the Linnæan and other herbariums, as also of perusing the various works on Mints, and thereby to give the following statement.

The Northumberland plant agrees well with the speci-

men in the Linnæan herbarium marked by Linnæus himself as *Mentha crispa*. If this be, as seems probable from analogous variations in other species, and as Linnæus long since pronounced all curled-leaved plants, merely a monstrosity, it is by no means easy to determine to which among the known Mints it ought to be referred. The quotation in the *Species Plantarum* of the synonym of *Hortus Cliffortianus* proves that Linnæus confounded with it the *M. crispata* of Schrader, to which the specimens in Cliffort's herbarium belong; and Ehrhart seems to have fallen into the same error, and to have led most of the German botanists in his train. Even Sir James Smith does not appear to have clearly distinguished between the two plants, Ehrhart's specimen of *M. crispata* being in his herbarium attached to the same sheet with a garden specimen of the true *M. crispa* of Linnæus. Sir James himself regards the former plant, as exemplified by the specimens in Cliffort's collection, as a variety of *M. viridis*, with which specimens from Houston in his own herbarium seem evidently to connect it; and in this he is followed by Mr. Bentham. But the true *M. crispa*, although extremely similar to *M. crispata* in habit, and agreeing with it in many of its characters, can hardly be regarded as a still further deviation from the same species, which in all its varieties is constantly, in the adult state, glabrous, and entirely destitute of hairs on the pedicelli of the flowers. The *Mentha crispa* differs from *M. piperita* in the hairy base of the calyx, from *M. hirsuta* in the naked peduncles, from *M. viridis* in the petiolated leaves. From *M. aquatica*, with which Mr. Bentham associates it, it seems to be distinguished by the characters in which it approaches *M. viridis*, by its spiked inflorescence, sparingly pilose calyx, almost naked pedicels, glabrous corolla, subsessile leaves, and strict habit. Dr. Stokes suspected it to be a variety of *M. piperita*, between which and *M. viridis* its true station will probably be found.

No truly natural habitat appears yet to have been noticed for this species. That of Siberia, originally assigned to it by Linnæus, appears, from a pencil note by Sir James Smith in the Linnæan herbarium, to have been founded on a very different plant. The Swiss habitat, adopted from Haller, is taken up from specimens stated by that author himself to have been exotic. And the plant of the Hartz, first noticed by Weber in 1774, appears from the reference by Hoffman of Ehrhart's plant to the same locality, to have been the *Mentha crispata*.

JAMES MITCHELL, R.N.

NEOTTIA gemmipara.

Proliferous Ladies' Traces.

GYNANDRIA Monandria.

GEN. CHAR. *Anther* parallel to the stigma, 2-celled, permanent. *Pollen*-masses without stalks. *Cal.* converging, embracing the base of the flat *nectary*, which is without a spur. *Pet.* converging. *Column* without wings.

SPEC. CHAR. Leaves lanceolate, as tall as the stalk. Spike 3-ranked, twisted. Bracteas smooth. Stigma subulate.

SYN. Neottia gemmipara. *Sm. Engl. Fl. v.* 4. 36. *Hook. Brit. Fl. ed.* 2. 373.

Spiranthes gemmipara. *Lindl. Syn.* 257.

ONE of the rarest and most interesting additions to the British Flora since the termination of the *English Botany*. It is still indeed so rare and so little known, that no opportunity could be obtained of figuring or describing it from a fresh plant, and we have gladly availed ourselves of the permission of the Linnean Society to examine the original specimen in Sir J. E. Smith's herbarium. The following account of it, "given by the accurate Mr. Drummond, and communicated to" Sir J. E. Smith, "in August 1810, by the Rev. Mr. Hincks of Cork," is copied from the *English Flora*. The only place in which it was ever found is "near Castletown, opposite to Bear Haven, on the northern side of Bantry Bay, County of Cork, in small quantities." "Root of two thick, fleshy, downy, annual, perpendicular knobs, each about 3 inches long, and $\frac{1}{3}$th of an inch in diameter near

its origin, tapering downwards to a blunt point. Leaves 5 or 6, upright, broadly lanceolate, acute, 3-ribbed, 3 inches in length. Footstalks broad, sheathing, near an inch long. Stalk erect, 2 inches high, sheathed more than half way up by the footstalks of the innermost leaves, and bearing in the upper part 2 or 3 lanceolate, smooth, upright bracteas. Spike an inch long, ovate, dense, erect, of about 18 white flowers in 3 rows, twisted round in a very remarkable way, and each accompanied by a smooth lanceolate bractea as tall as itself. The flowers much resemble those of *N. spiralis*, and the tip is fringed; but the calyx and petals are twice as long as in that species. The calyx is more taper-pointed. The outside of the flowers and the capsule are downy; every other part of the herb is smooth. Buds destined to flower the following year are formed among the leaves at the bottom of the flowering stalk. After flowering the root decays, and the following spring each bud puts forth a pair of oblong knobs, as above described, and becomes a separate plant."

The examination of the dry plant has not enabled us to perceive the spiral order of the flowers, neither could we detect the fringe of the nectary. But we have ascertained that the stigma is ovate at the base, and produced into a long subulate point, not bifid as in *Neottia* and Richard's genus *Spiranthes*: indeed we know of no genus under which it can properly be placed. It is consequently much to be wished that some able botanist may be so fortunate as to obtain living plants and thus enabled to furnish a more complete description. J. D. C. S.

August 1st 1834

EUPHORBIA pilosa.

Great Hairy Spurge.

MONŒCIA Monandria.

GEN. CHAR. *Involucrum* cup-shaped, bearing 4 or 5 peltate glands, inclosing numerous male flowers and 1 female stalked. *Calyx* and *Corolla* none. *Styles* 3, cloven. *Capsule* 3-lobed.

SPEC. CHAR. Umbel irregular, mostly of 5 trifid branches. Bracteas elliptical, glabrous, entire. Glands 4, rounded. Leaves sessile, ovate-lanceolate, entire or finely serrated, hairy beneath. Capsules minutely warted, hairy. Seeds obovate, glossy.

SYN. Euphorbia pilosa. *Linn. Sp. Pl.* 659. *Willd. Sp. Pl. v.* 2. 917. *Rœp. Euph.* 63.

E. epithymoides. *Babington, Fl. Bath.* 44.

E. foliis alternis ex ovali-lanceolatis, umbellis diphyllis subtrifloris, capsulis erectis muricatis caule simplici. *Gmel. Fl. Sib. v.* 2. 226. *t.* 93.

Tithymalus palustris villosus mollior erectus. *Barr. Rar. t.* 885.

T. incanus hirsutus. *Bauh. Pin.* 292? *Prodr.* 133?

T. characias pratensis incanus. *Magn. Monsp.* 255?

THIS plant, which had not to my knowledge been recorded as a native of these islands before it was introduced in my *Catalogue of Bath Plants* published in January last, grows in great plenty and luxuriance in a little-frequented lane to the west of Prior Park, near Bath, and also in coppice-wood, far from any house, to the east of the same place. I have not the slightest doubt of its being indigenous in both the above-mentioned places, as there is not the least appearance of its having escaped from any garden. It flowers in June.

Root perennial, thick, woody, black externally. Stems 2 or 3 feet high, reddish, glabrous, naked below, biennial. Leaves alternate, ovate-lanceolate, blunt, hairy beneath, and when young also on the upper surface, mostly quite entire, sometimes with a few minute serratures near to the tip. Umbel of about 5 principal branches, with several scattered inferior ones, usually trifid, and then bifid. Bracteas elliptical, glabrous. Glands of the involucrum 4, yellow, transversely elliptical, with intervening rounded lobes. Capsule, when young, covered with slightly prominent purple spots, from each of which, as the age increases, a pellucid hair is produced, so as to cause the nearly ripe fruit to appear shaggy. Seed smooth. The whole plant is filled with milky juice.

I am indebted to my friend Mr. D. Don for the generic and specific character, and synonyms given above.

CHARLES C. BABINGTON.

Previously to the publication of my friend Mr. Babington's *Flora Bathoniensis*, I was induced to consider this as *E. epithymoides*; but I had then only seen a dried fragment of the plant, and having since been furnished with more perfect specimens, I am now fully convinced of its being essentially different from that species, and identical with the *E. pilosa* of Linnæus. In the Bath specimens I found some of the capsules nearly glabrous; a circumstance which appears to confirm the views of Rœper of the propriety of combining *villosa* and *procera* with the present species. It comes very near to *palustris*, both in habit and characters, being only distinguished from that species by its hairy leaves. The figure of Barrelier appears to represent this plant, but I regard the synonyms of Bauhin and Magnol as very doubtful. It is very possible, as my learned friend Mr. Forster has suggested, that the English stations for *hiberna* mentioned by Dillenius and Hudson may belong to this species. Whether the station given by Ray for *E. characias* belongs to this or *amygdaloides* is doubtful; but I have always been of opinion that the claims of *E. characias* to a place in the British Flora rested on very insufficient grounds.

The *E. pilosa* of Hooker's *British Flora* is altogether a different plant, being clearly *E. coralloides* of Linnæus, which occasionally occurs in gardens under the name of the former. It is well distinguished by its globose even capsules, thickly clothed with silky hairs, dwarfer habit, and oblong-spathulate, stalked leaves, hairy on both sides. The synonym of Bauhin above referred to would appear from the description (*Prod.* 133.) to belong to this, and that of Magnol to *E. epithymoides*.—D. DON.

OROBUS niger.

Black Bitter-vetch.

DIADELPHIA Decandria.

GEN. CHAR. *Style* linear, nearly cylindrical, downy above. *Calyx* obtuse at the base, oblique at the mouth, its upper segments deeper and shorter. (Leaves *without tendrils.*)

SPEC. CHAR. Leaves pinnate, with 3—6 pairs of elliptic leaflets. Stipules linear-lanceolate, acute. Stem branched, angular, erect.

SYN. Orobus niger. *Linn. Sp. Pl.* 1028. *Curt. Bot. Mag. t.* 2261. *Hook. Scot. P.* II. 267. *Sm. Engl. Fl. v.* 4. 270. *Hook. Brit. Fl. ed.* 2. *v.* 1. 319.

THIS pretty species of *Bitter-vetch*, long cultivated in our gardens, and a native of the Continent of Europe, from Spain and Portugal in the south to Sweden and Norway in the north, was nevertheless unknown, as an indigenous plant of Great Britain, till Mr. Thomas Drummond, now so successfully engaged in exploring the Botany of Texas, discovered it, a few years since, growing wild in the romantic den of Airly, about 12 miles west of Torfen. Subsequently, Dr. MacLachlan has found it at Craiganain, a rock within 2 miles of Moy House, Inverness-shire. Its flowering season is June and July.

Root long and tapering, and, like that of *O. tuberosus*, sweet to the taste. Stem 1—2 feet high, erect, a good deal branched, and angular. Leaves like all the rest of the plant, glabrous, pinnated, with from 4—6 pairs of elliptical leaflets, an inch or an inch and a half long, in our native

Scottish specimens longer than in our Continental or cultivated ones, in some few instances even approaching to lanceolate; each is tipped with a small mucro. The leaves, and indeed the whole plant, turn singularly black in drying. Stipules linear-lanceolate, very acute and entire, 2—3 lines long. Peduncles axillary, slender, longer than the leaves, bearing a raceme of 4—8 flowers, very elegantly varied with bluish purple and red. These are succeeded by black, linear, acuminated, compressed pods, inclosing 5—6 oblongo-elliptical, compressed, dark brown, perfectly smooth seeds. —W. J. H.

The flowers and colouring have necessarily been finished in the figure from garden specimens. The wild flowers were apparently larger and less numerous.—J. D. C. S.

TRIFOLIUM resupinatum.

Reversed Trefoil.

DIADELPHIA Decandria.

GEN. CHAR. *Flowers* more or less capitate. *Pod* scarcely longer than the calyx, one-seeded, falling off entire.

SPEC. CHAR. Heads hemisphærical, at length globose, on stalks which lengthen greatly by age. Corolla reversed. Calyx after flowering membranaceous, reticulated, inflated, hairy; its teeth acute, two of them longer, patent. Leaflets obovate. Stem prostrate.

SYN. Trifolium resupinatum. *Linn. Sp. Pl.* 1086. *Willd. Sp. Pl. v.* 3. 1379. *De Cand. Prodr. v.* 2. 202. *Hook. Brit. Fl. ed.* 2. 327. *De Cand. Fl. Fr. ed.* 2. *v.* 4. 534. *Duby, Bot. Gall.* 134.

DISCOVERED in meadows near Bristol, by Mr. Drummond. We are indebted to Thomas Bell Salter, Esq., for a new station, it having been found by him, about the Midsummer of 1831, growing very luxuriantly near the Poole Ballast-quay at Ham, opposite Poole Quay. He observes that it may possibly be brought in ballast from Bristol. Owing to alterations since made in the quay, it has been much trodden, and has consequently diminished in stature: the two states are shown in our plate*.

Root perennial, fibrous. Stems several, prostrate, or

* The specimens came by post, and although sufficiently fresh in colour, the heads were much crumpled; and the position of the flowers not having been well observed, they are not drawn reversed, as they should be, but the relative position of the petals and calyx is correct.

ascending. Leaves upon petioles that vary much in length and are often recurved. Stipules membranous, broad, attenuated, reticulated. Flowers in subglobose heads, numerous, nearly sessile. Calyx imperfectly 2-lipped, when old inflated, membranous, and reticulated; the upper lip of 2 long, spreading, linear, acute teeth, the lower of 3 shorter, acute teeth. It is the upper half of the calyx only that is hairy, and that becomes membranous. Corolla elongated, for some time persistent, the vexillum placed against the lower 3-toothed lip of the calyx, and turning downwards, contrary to the usual position of that part. The legume concealed in the calyx is 2-seeded. The whole plant, excepting the calyx, is free from hairs.

A pretty plant, rendered curious by the reversed position of the flowers, and the hairy inflated calyces of the ripe heads. It is very likely to become general, but in all probability has been introduced from the Continent.—J. D. C. S.

Cistopteris angustata.

August 1st 1834

CYSTEA angustata.

Deep-cut Bladder-fern.

GEN. CHAR. *Caps.* in roundish scattered *masses. Cover* orbicular, concave, fixed by a lateral point underneath, finally reflexed and jagged.—*Sm.*

SPEC. CHAR. Frond oblong, doubly pinnate; leaflets lanceolate, decurrent, wavy or pinnatifid, with linear, acute, partly cloven segments. Masses scattered, permanently distinct.—*Sm.*

SYN. Cystea angustata. *Sm. Engl. Fl. v.* 4. 301; omitting the syn. of *Ray* and *Bauhin*, and *Aspidium rhæticum, Willd.*

Cystopteris dentata β. *Hook. Brit. Fl. ed.* 2. 443.

Cyathea fragilis β. *Fl. Brit.* 1139; omitting the syn. of *Ray* and *Plukenet.*

Polypodium fragile angustatum. *Hoffm. in Rœm. and Ust. Mag.* 9. 11. *f.* 14. *d.*

P. tenue. *Hoffm. Fl. Germ. v.* 2. 9.

P. rhœticum. *Dicks. H. Sicc. fasc.* 1. 17. *With.* 780. *Bolt. Fil.* 80. *t.* 45.

P. polymorphum A. rhæticum. *Villars, Dauph. v.* 3. 846. *t.* 53. *f.* A.

Aspidium fragile β. *Willd. Sp. Pl. v.* 3. 281.

Filix pumilas axatilis altera. *Clus. Hist. v.* 2. 212. *f. Pann.* 766. *f.*

F. saxatilis non ramosa, nigris maculis punctatis. *Bauh. Pin.* 358. *Moris. v.* 3. 581. *sect.* 14. *f.* 4. *f.* 28.

Filicula petræa mas. *Ger. Em.* 1142. *f.*

THIS Fern, the drawing of which was made from a garden specimen of native origin, probably occurs in many parts

of Great Britain; by no means so frequently as *Cystea fragilis*, yet perhaps more so than *C. dentata*. I have observed it wild in the beautiful grounds of Thomas Andrew Knight, Esq., P.H.S., at Downton, in Herefordshire. We owe the knowledge of it to the discriminating eye of Dickson, who gathered it in Scotland, and communicated it to Curtis, from whose garden it was introduced into others. Having cultivated it for more than thirty years, I do not hesitate to concur with Smith in bearing testimony to the accurate judgement of that eminent Cryptogamist in considering it specifically distinct. He was, however, mistaken in referring it to *Polypodium rhæticum* of Linnæus, a plant now supposed to have no existence, while that of Hudson is *Aspidium dumetorum* of Smith. *Aspidium rhæticum* of Willdenow is not known as a British plant.

The ample description in the *English Flora* renders it only necessary here to point out the characters by which this species may be known from its allies, *C. fragilis* and *C. dentata*. From the former it differs in being of a larger size, yet more tender texture, the leaflets more lanceolate or lato-lanceolate, more finely cut, and scarcely convex; from the latter also in size and tender texture, but principally by the ultimate divisions of the leaflets not being dilated, rounded, or ovate, but oblong, deeply cut and toothed to the very extremity of the frond. The name, taken from Hoffman, does not appear very characteristic.—E. F.

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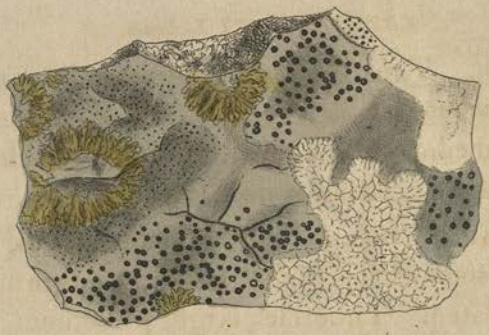
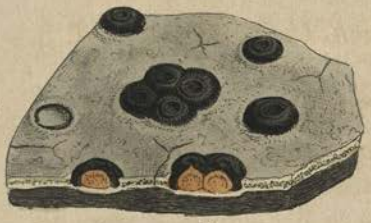
1945





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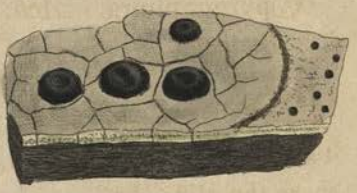

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Verrucaria Dufourii

August 1st 1831.

VERRUCARIA Dufourii.

Dufourian Verrucaria.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Tubercles* of a different substance from the thallus, simple, convex, not expanding, but furnished with a central pore, and inclosing a somewhat gelatinous nucleus.

SPEC. CHAR. Crust determinate, tartareous, smoky grey, somewhat pruinose, level; at length minutely tessellated. Tubercles large, prominent, mostly truncate, black.

SYN. Verrucaria Dufourii. *De Cand. Fl. Fr. ed 2. v. 2. 318. Duby, Bot. Gall. 646. Fries, Lich. Reform. 433.*

V. pyrenophora. *Ach. Lich. Univ. 285. t. 4. f. 3. Syn. 94.*

THE discovery of this Lichen, in 1833, at Chedder, where it abounds on calcareous rocks on the summit of the hill above the cliffs, has enabled us to distinguish it more decidedly from *V. epipolæa, t. 2647, f. 3.* in the account of which it is dubiously mentioned by the Acharian name*. Its differences may be collected from the following description. It was first named by De Candolle after the Chevalier Dufour, who observed it on walls at Meudon. It has since

* We are now convinced that the species before us, not that alluded to under *V. muralis, t. 2647. f. 2,* is the true *V. Dufourii.* From Fries's descriptions, our *V. epipolæa* appears to be his *V. conoidea* (*V. rubella* of "Chaubard" and of Duby,) rather than his *V. argillacea,* to which last "chiefly" he refers the Acharian *V. epipolæa.*

been found in other parts of France, in Switzerland, and in Germany.

Crust spreading in wide patches, with a tendency to a circular outline, and usually bounded by a narrow black or brownish line: substance thicker than in *V. epipolæa*, white within, except a very thin green layer immediately under the surface: surface of a somewhat pruinose appearance, grey, tinged more or less deeply with mouse-colour, level, continuous at first, at length divided by minute cracks, perceptible under a glass and in a dry state only, into small areolæ. Tubercles numerous, regularly scattered, about the size of cabbage-seed, hemispherical or even more prominent; the base sometimes slightly dilated, sometimes contracted, slightly immersed in the thallus; the apex usually truncate, or, when dry, concave, the large circular dimple surrounded by a narrow edge, and sometimes furnished with a central papilla; shell black, occasionally polished, but usually not without a slightly pruinose appearance when dry, incurved at the base, but not subtending the whole of the nucleus, which is pale, brownish in a dry state, and then more or less shrunken, yet still sometimes almost filling the shell. Not unfrequently two or more tubercles form by their confluence a compound apothecium: except when this takes place the shape of the tubercle is usually regular.—W. B.

Fig. 1. represents the appearance of the plant when dry, and fig. 2. when moistened.

Jan.y 1st 1835.

ASPERULA arvensis.

Field Woodruff.

TETRANDRIA Monogynia.

GEN. CHAR. *Cor.* of 1 petal, funnel-shaped, superior. *Seeds* 2, not crowned.

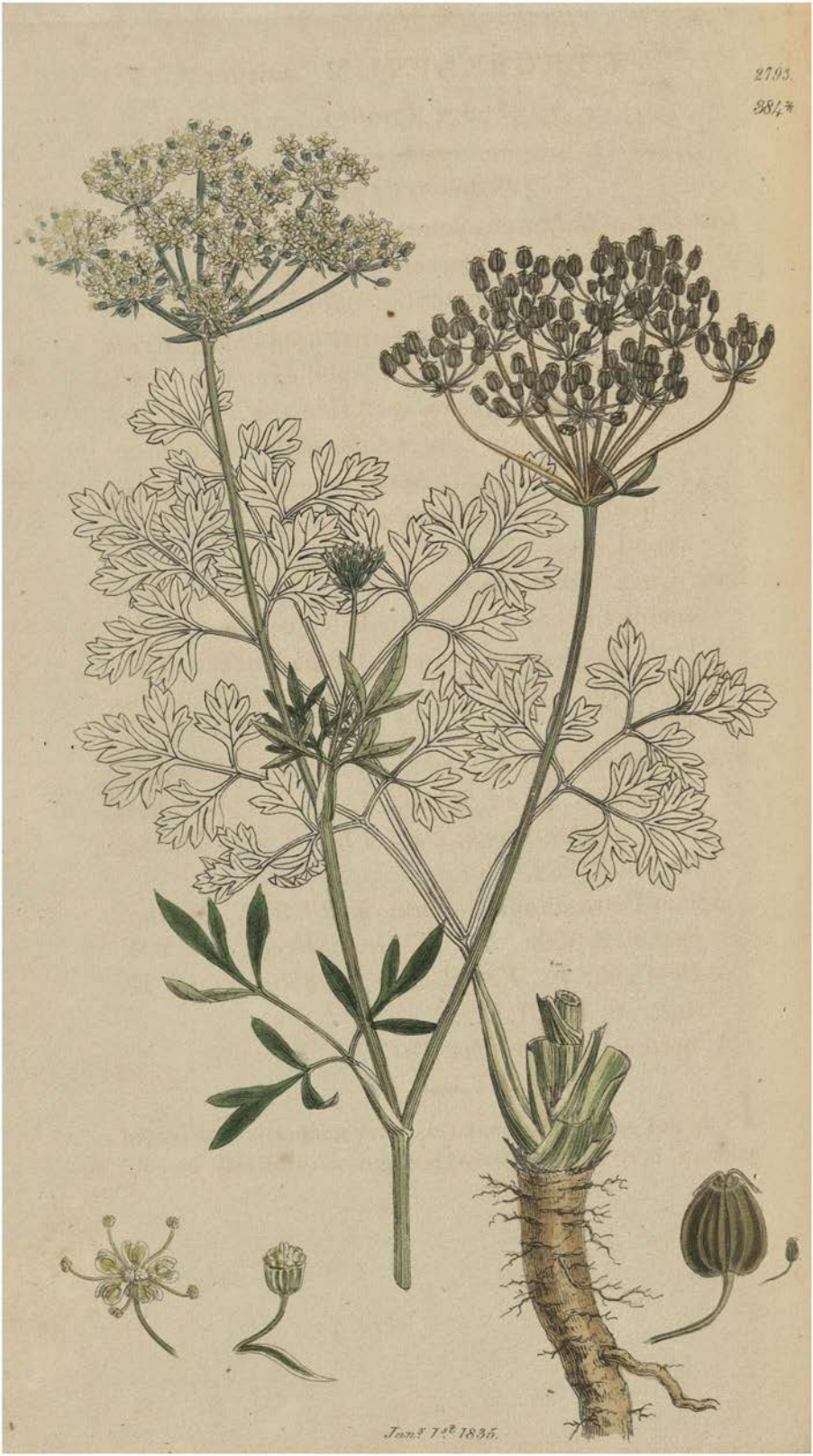
SPEC. CHAR. Leaves 6—10 in a whorl, linear-lanceolate, obtuse. Flowers aggregated, terminal, sessile, in pairs. Bracteas long, ciliated. Root annual.

SYN. Asperula arvensis. *Linn. Sp. Pl.* 150. *Willd. Sp. Pl. v.* 1. 576. *Banks, Plym. and Devon. Fl. no.* VIII. *Hook. Brit. Fl. ed.* 2. 68. *Engl. Bot. ed.* 2. *v.* 2. 4. *Mert. and Koch, Deut. Fl. v.* 1. 761. *De Cand. Fl. Fr. ed.* 2. *v.* 4. 244.

THIS plant, which is of frequent occurrence in the central parts of Europe, is probably only an occasional visitor to England, its seeds being now and then accidentally imported. The figure is taken from a specimen supplied by the author of the local Flora above quoted, who gathered it a few yards within the left-hand gate at the end of Longbridge, Saltram, where Mr. C. Johns discovered it in the year 1830, but where however the plant is now nearly, if not quite lost, in consequence of the construction of a railroad. Linnæus mentions England among its localities. Its resemblance to *Sherardia arvensis* is such, that it may chance to have been passed over without being discovered, although its leaves are longer and narrower.

The root is annual, fibrous. Stem square, ascending, branched; branches opposite, unequal, rarely branched

again, 6 inches to a foot high. Leaves 6—8 in a whorl, linear-lanceolate, obtuse, rough about the margin, the lower ones ovate-lanceolate. The cotyledons nearly orbicular, large, often persistent. Flowers in terminal umbels, sessile, in pairs, surrounded by ciliated bracteas. Corolla blue, striped. Fruit glabrous, large.—J. D. C. S.



Jan.y 1.st 1835.

PETROSELINUM sativum.

Common Parsley.

PENTANDRIA Digynia.

GEN. CHAR. *Cal.* an obsolete margin. *Petals* roundish, incurved, entire, scarcely emarginate, contracted into an inflexed segment. *Styles* diverging; their base short, conical, somewhat crenulate. *Fruit* ovate, laterally contracted, subdidymous, with 5 equal filiform ridges on each side, the lateral ones forming a margin; interstices with single *vittæ*. *Fruitstalk* splitting. *Seed* gibbo-convex, flattish in front. *General involucre* of few, *partial* of many leaves.—*Koch.*

SPEC. CHAR. Stem erect, striated. Leaves shining, doubly compound; segments trifid; those of the lower leaves ovato-cuneate, toothed, of the upper lanceolate, entire. Leaves of partial involucres subulate.

SYN. Petroselinum sativum. *"Hoffm. Umb. Gen." Hook. Brit. Fl. ed. 2.* 125. *De Cand. Prodr. v. 4.* 102. *Mert. et Koch, Deut. Fl. v. 2.* 449. *Duby, Bot. Gall.* 232.

Apium Petroselinum. *Linn. Sp. Pl.* 379. *Spreng. Syst. v. 2.* 890. *Sm. Fl. Græc. Prodr. v. 1.* 204. *De Cand. Fl. Fr. ed. 2. v. 4.* 338. *Host, Fl. Austr. v. 1.* 401.

A. hortense. *Ger. Em.* 1013.

IT is not surprising that this very generally cultivated culinary herb should have become naturalized on old

walls in many places, especially in the South of England. Our specimens are from St. Vincent's Rock, upon the ledges of which the plant has altogether a wild appearance. It is said to be a native of Greece, Sardinia, Austria, and the South of France. It was admitted into the British catalogue, at the suggestion of Mr. Forster*, in the second edition of the *British Flora*; and Dr. Hooker, with Koch and De Candolle, follows Hoffmann in distinguishing it generically from *Apium*, of which *Apium graveolens* is still regarded as a species.

Root white, fusiform, biennial. Whole herb bright green, smooth and shining. Stem about eighteen inches high, with spreading branches. Leaves, as usual in this *natural order*, nearly triangular in general outline; lower ones doubly compound, with broadly cuneate toothed segments, upper ones more simple, with segments more elongated, tapering to each end, and nearly or quite entire: their sheathing bases have membranous white edges, as have those of the narrow involucral leaves. Petals pale green.

In this species the rays of the umbel are numerous and regular; in *Sison segetum* of Linnæus, which Koch, De Candolle, and Hooker refer to the same genus, they are few and of very unequal length.—W. B.

* In *Israelis Lyons jun.* '*Fasciculus Plantarum circa Cantabrigiam nascentium, quæ post Raium observatæ fuere,*' (*Londini*, 1763,) it is inserted as growing on Gogmagog Hills.—*Mr. Forster.*

IMPATIENS fulva.

Tawny-flowered Touch-me-not.

PENTANDRIA Monogynia.

GEN. CHAR. *Cal.* inferior, 2-leaved, deciduous. *Cor.* irregular, 4-petaled; lateral petals interior (mostly 2-lobed); lowermost, or *Nectary*, cucullate, with a spur. *Anthers* cohering. *Caps.* of 5 elastic valves.

SPEC. CHAR. Leaves ovate, tapering to the base, coarsely serrated. Peduncle solitary, about 4-flowered. Cone of the nectary longer than the lateral petals, and twice as long as the closely recurved emarginate spur.

SYN. Impatiens fulva. *Nutt. Gen. Amer. v.* 1. 146. *De Cand. Prodr. v.* 1. 687. *Spreng. Syst. v.* 1. 808. *Hook. Fl. Bor. Amer.* 117.

I. biflora. *Willd. Sp. Pl. v.* 1. 1175. *Pers. Syn. v.* 1. 257. *Pursh, Fl. Amer. Sept.* 171. *Sweet, Brit. Gard. t.* 43.

"I. Noli me tangere β. fulva. *Michaux.*"

THIS plant, hitherto regarded as exclusively American, is found so extensively on the River Wey, in Surrey, and on several of its tributary streams, that, however it may have become established there, it can scarcely be refused a place in the British Flora. Mrs. Finnamore, of Guildford, has traced it seven miles down the river, from St. Catharine's Hill, (a mile above that town,) where our specimens were

gathered in August 1834, and has information that it grows also at Weybridge: it may be inferred, therefore, that it accompanies the whole course of the Wey, from the spot first mentioned, to its junction with the Thames, a distance of at least fifteen miles. About Albury, four miles South-east of Guildford, it grows in the greatest profusion and luxuriance by a stream that falls into the Wey over against St. Catharine's Hill; and at Shiere, on the same stream, it is understood to have been first observed, several years ago, by Mr. George Graves. An *Impatiens* nearly allied to this, but differing in some points, has been communicated by Mr. Anderson of the Chelsea Garden, as brought from a wild station in the neighbourhood of Bristol by Mr. Sweet.

I. fulva is annual, flowering from July to the end of summer. Stem erect, two or three feet, or even more, in height, obscurely angular, with a central hollow, pellucid, very succulent, and, like every part of the plant, quite smooth; joints tumid, especially the lower ones, which often throw out fleshy roots: branches ascending. Leaves quickly withering when gathered, alternate, stalked, slightly decurved, of a dark dull green with a little glaucescence, brighter beneath, ovate or approaching to rhomboid, tapering equally to each end: serratures tipped with a reflexed glandular tooth, a few of the lowermost lengthened into short ciliæ. Both stem and leaves usually tinged a little with red. Flower-stalk axillary, shorter than the leaf, bearing about four pendulous flowers, of which seldom more than two have a perfect corolla; each partial stalk with a small ligulate bractea. Calyx-leaves concave, roundish, pale, with a greenish mid-rib and short point. Petals in two ranks; upper and lower petals attached to the receptacle below the lateral ones, which they inclose before the flower expands; all of an orange-yellow within, copiously spotted with red; upper petal arched, rounded, emarginate, with a point in the notch, the termination of the greenish keel: lower petal, or nectary, a tubular cone with a cylindrical spur; its mouth oblique, pointed below; its spur rather thickened

towards the emarginate apex, less than half as long as the cone, under which it is closely recurved and mostly appressed: lateral petals twice as long as the upper one, rather shorter than the cone of the nectary, very unequally two-lobed; upper segment a rounded appendage at the base of the lower; lower clawed, oblique, rounded, emarginate, with recurved edges and a wrinkled convex disk. Filaments short, dilated and curved a little below their summit. Anthers when ripe cohering, closely surrounding and concealing the stigma, all alike in structure*, two-lobed, each lobe containing an obscure transverse septum, so that the entire anther is imperfectly four-celled. (See magnified fig.) Pollen copious, white; its particles oval. Stigma sessile, of four united points. Capsule oblong, acute, prismatic, irregularly tumid, discharging the seeds by bursting elastically when mature with the slightest touch, the five valves rolling up spirally inwards from the base. Seeds about five, oval, angular, four-ribbed, attached to a central membranous-winged column.

The red spots in the corolla vary in abundance even on the same branch; but in our wild plant they are almost always so numerous and confluent as nearly to cover the disk of the lateral petals with a mottled blotch, thus adding much to the beauty of the flower. In the plant usually seen in gardens, and in an American specimen from Dr. Torrey, kindly communicated by our friend Mr. W. Christy, they are fewer and more distinct.

The lateral petals of this genus have been variously understood, as two connate ones on each side, or as single and two-lobed. In all the species that have fallen under our examination alive, they fall off in one piece. The segments are sometimes equal. They are said to be sometimes sepa-

* Thus exhibiting one of the characters by which *Balsamina* has been separated as a genus from *Impatiens*. The difference in the stigmas is equally inconstant; those of *I. parviflora*, an uncontroverted *Impatiens*, being distinct, elongated, and spreading. The valves of the bursting capsule, too, in the few species of *Impatiens* that we have examined, are "*introrsum involutæ*," not "*extrorsum revolutæ*."

rate, and the upper one to be wanting in some species. In various species of *Impatiens*, as in *Viola*, the imperfect flowers produce fertile seeds. De Candolle has described them in *Flora Française*, *tome* 5, *p.* 629.

The specimen preserved in the Linnæan herbarium as *I. Noli me tangere* is a Canadian one, and belongs to our *I. fulva*, which Linnæus did not distinguish as a species: but the plant originally intended was undoubtedly the pale yellow-flowered species represented in *Engl. Bot. t.* 937, and in *Fl. Dan. t.* 582. We are obliged to Mr. Forster for ascertaining this point, by examination of Clifford's specimen in the Banksian collection, now in the British Museum. The *Engl. Bot.* figure, although made from a garden, agrees with our native specimens of the plant found wild in Cumberland and Yorkshire. It has been referred to *I. pallida* of Nuttall, of which we have not seen authentic specimens, nor does the description enable us to judge whether it is the same or not.—W. B.

Jan.y 1st 1835.

SALIX tenuifolia.

Thin-leaved Willow.

DIŒCIA Diandria.

GEN. CHAR. Male, *Cal.* a scale of an imbricated catkin, single-flowered. *Cor.* none. *Nect.* a gland or glands at the base of the stamens. *Stam.* 1—5 (or more). Female, *Cal.* and *Nect.* as in the male. *Cor.* none. *Caps.* of 1 cell and 2 valves. *Seeds* tufted.

SPEC. CHAR. Upright. Young shoots and leaf-stalks densely pubescent. Leaves elliptical or oblong, flat, with a recurved point, crenate, reticulated with sunken veins, slightly hairy; glaucous beneath. Stipules half heart-shaped. Catkins on a short stalk. Bracteas small. Calyx-scale oblong, shaggy. Germen naked, on a naked stalk. Style as long as the stigmas.

SYN. Salix tenuifolia. "*Linn. Fl. Lapp. ed.* 2. 292. *t.* 8. *f. e.*" *Sm. Fl. Brit.* 1052. *Engl. Fl. v.* 4. 179. (*excl. syn. Engl. Bot.*) *Hook. Brit. Fl. ed.* 2. 426. *Forbes, Sal. Woburn.* 99. *t.* 50.

FROM plants brought in 1810 from Kirkby Lonsdale Bridge, where Sir J. E. Smith observed the species in 1783. It is on his high authority that it is regarded as the *S. tenuifolia* of Linnæus, for we could not venture to decide on the imperfect original specimen in the Linnæan herbarium, nor on the description in *Flora Lapponica*. The figure in that work represents only a floral leaf, and that unlike any that we have seen on our plant.

A much branched spreading shrub, ten or twelve feet high. Twigs very downy when young, afterwards bare, or nearly so, and shining, green, or tinged, especially in the female plant, with brown. Leaf-stalks downy, spreading, rather long, dilated at the base. Leaves by no means remarkably thin, ovate, or more or less rhomboid, with a short decurved somewhat twisted point; on strong young shoots

more oblong; dark green above and moderately shining, glaucous beneath; sprinkled, when young, on both sides, with appressed hairs, some of which, but very inconspicuous, remain in the advanced state, especially on the underside and about the midrib above; veins sunken on the upper surface, very prominent on the under; margin rather closely serrate, or rather crenate, especially about the middle of the leaf, with a glandular tooth in the notches. Stipules small, except on very vigorous shoots, half heart-shaped, pointed, serrated, beset with glands on the edges and on the lower part of the disk. The catkins appear in May, before the expansion of the leaves. They are cylindrical, about an inch long when in full flower. Bracteal leaves few, deciduous, silky beneath. Flowers closely imbricated. Calyx-scales with long silky hairs, oblong, pale at the base, varied with brown and black towards the point, which is rounded in the male and scarcely acute in the female flowers. Stamens two, thrice as long as the scale. Anthers yellow. Germen on a stalk about half as long as the scale when in flower, tapering from an ovate base. Style a little longer than the short cloven stigmas. Both the germen and its stalk are quite void of pubescence: but we have, from the same locality, what seems a variety of this species, with silky hairs on the upper half of the germen and towards the base of its stalk. This is perhaps the plant mentioned in *Flora Britannica* as deserving further investigation.

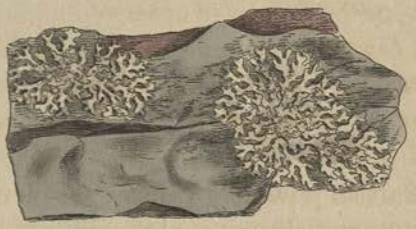
S. tenuifolia is a link between the *Salices nigricantes* and *bicolores* of Hooker's *British Flora*, most allied perhaps to the former*; and, indeed, so nearly to *S. rupestris*, that we cannot undertake to point out satisfactory distinctions. Yet Koch places *S. tenuifolia* of Smith under *S. Arbuscula*, and *S. rupestris* under *S. phylicifolia*. Our *S. Weigeliana*, *t.* 2656, is another nearly related species. We have lately seen reason to suspect that we have erred in regarding that Willow, rather than *S. Weigeliana* of *Salictum Woburnense*, as the true *S. Weigeliana* of Willdenow. We think we have both male and female specimens of Mr. Forbes's plant from the Highlands of Scotland.

It is now sufficiently understood that *S. tenuifolia* of *Engl. Bot. t.* 2186, is not the plant bearing that name in *Flora Britannica*, but *S. bicolor* of Hooker's *British Flora*.—W. B.

* Its leaves do not become black in drying. The term *nigricantes* is applied to the group, not, as has been supposed, in allusion to such a quality, but to mark the affinity of the species composing it to a well known individual of their number.

2796.

2167.



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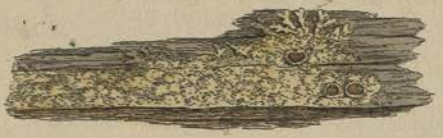

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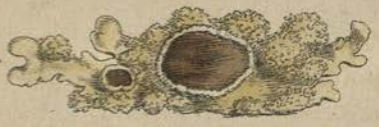

Parmelia ambigua?

Jan.y 1.st 1835.

PARMELIA ambigua.

Ambiguous Parmelia.

CRYPTOGAMIA Lichenes.

GEN. CHAR. *Scutellæ* formed from the thallus, affixed by a central point, the circumference free. *Disk* of a different substance from the margin.

SPEC. CHAR. Thallus very thin, appressed, stellated, bearing flattish powdery warts; segments flat, linear, dichotomously many-cleft; underside brown, fibrillose. Scutellæ small, flattish; disk brown; margin slightly elevated, powdery.

α. greenish yellow.

SYN. Parmelia ambigua. *Ach. Meth.* 207. *Lich. Univ.* 485. *Syn.* 209. *Hook. Fl. Scot. P.* 2. 55. *Brit. Fl. v.* 2. 203. *Fries, Lich. Eur. Reform.* 71. *Duby, Bot. Gall.* 603.

P. diffusa β. *Bluff et Fing. Fl. Germ. Comp. v.* 3. 497.

Squamaria ambigua. *Hoffm. Pl. Lich.* 56. *t.* 40. *f.* 2—4. *t.* 42. *f.* 2, 3.

Lichen ambiguus. *Wulf. in Jacq. Coll. v.* 4. 239. *t.* 4. *f.* 2. *Ach. Prod.* 117. *Wahl. Fl. Lapp.* 429. *Fl. Suec.* 818.

β. white.

Parmelia ambigua β. *Wahl. Fl. Suec. l. c.*

P. diffusa α. *Bluff et Fing. l. c.*

Lichen diffusus. *Web. Spicil. Goett.* 250.

A NATIVE of Scotland and Wales, chiefly on old fir-trees, very rarely producing its apothecia. Our barren specimens were gathered in 1808, the yellow variety in the ascent of Larig Crue under Cairn Gorm, the white in the neighbouring Forest of Rothiemurchus; that with shields at *a*, was sent by the late Mr. G. Don from Marr Forest,

in Aberdeenshire; that at *b*, by the Rev. T. Salway, fro old pales in Powis Park, Montgomeryshire.

Thallus circular when young, with distinct, flat, closely appressed, thin and membranous, narrow, linear, repeatedly dichotomous segments, with slightly erose edges and scarcely dilated truncate extremities; the surface of a lemon-yellow, in general unpolished, even, or minutely wrinkled, bursting forth here and there, chiefly in the central parts, into a few round, flattish, powdery warts. In an old state almost the whole plant becomes a glebulose powdery mass. Scutellæ centrally affixed, but usually so immersed in the powder of the thallus as to appear sessile: disk reddish brown, flat at first, soon becoming convex: margin slightly elevated, thickish, powdery, entire, or, more frequently, variously lobed and crenate, sometimes depressed and concealed by the swelling of the disk. We have foreign specimens in which the segments are rather wider and less separated, but still flat and closely appressed. Such a specimen is given in our set of Mougeot and Nestler's collection, *no.* 449, for *P. aleurites*.

β. seems to differ from α. in colour only, the upper surface being of a dead greyish white, the under of a paler brown. We have not seen its scutellæ, which Wahlenberg says are of a deeper brown. Fries refers *P. hyperopta* of Acharius to this variety.

Bluff and Fingerhuth, although they still retain it under a separate name, declare their opinion that this Lichen is but a form of *P. centrifuga*, a plant not yet observed in Britain, which, amongst other differences, has wider, more convex, and less appressed segments. To the same species they refer also *P. conspersa*, *t.* 2097 of *Engl. Bot.*, and even *P. caperata*, *t.* 654. Among British species, *P. ambigua* resembles, in its appressed mode of growth, *P. incurva* and *P. adglutinata**, and in the division of its segments

* *Parmelia adglutinata*, "*Floerke in litt.*" Mougeot and Nestler, *Crypt. Vog. no.* 543; *Lichen elæinus Engl. Bot.* 2158; *Squamaria elæina Hook. Brit. Fl.*; but not *L. elæinus* of Wahlenberg, which is altogether without powdery warts.

P. incurva again, *P. cæsia,* and the narrow state of *P. speciosa*: but in its apothecia it differs widely from all these, and even when the scutellæ are wanting it is so little liable to be mistaken, that it is scarcely necessary to describe the differences. Narrow specimens of *P. sinuosa* * are at once distinguishable by the polished surface and the rounded sinuses. The white variety bears some general resemblance to *P. aleurites*; but that species differs by its wider and less appressed segments, by the isidium-like granules that cover the surface instead of powdery particles bursting forth in warts, and by its elevated scutellæ.—W. B.

* One specimen of *P. sinuosa*, with scutellæ, was found in Glen Nevis in 1810; and one such specimen of *P. speciosa* has occurred in St. Leonard's Forest, Sussex, where the plant grows sparingly on beech-trees.

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ERRATA AND OBSERVATIONS.

Descr. 2698. The plate to which this refers is in some copies numbered 2694.
— 2718 and 2719. The numbers of the plates are accidentally reversed.
— 2723, line 4 from the bottom, *erase* the comma.
— 2732, after SYN. *insert* Callitriche autumnalis.
— 2738, *Chara aspera*. This plant kept in a tub of water near London gradually lost its bristles and produced nucules the first year. Young plants have been repeatedly produced with both nucules and globules together and very few bristles, in fact completely changed into *Chara vulgaris*.—Dec. 1834. Would transferring it to a colder climate reproduce *Ch. aspera*? —J. D. C. S.
— 2742, *add* ICOSANDRIA *Polygynia*.
— 2748, *add*, There is in Mr. Sowerby's herbarium a specimen of *Silene patens*, gathered at Dover by Edward Forster, Esq., in 1822.
— 2752, *Crocus speciosus*. Cultivation and comparison with specimens from Nottingham have shown that this is hardly even a variety of *C. nudiflorus*, *t.* 491.
— 2765 and 2766, at the end, *add* Fig. *a.*, seed of *S. asper*; Fig. *b.*, that of *S. oleraceus*.
— 2769, second page, *for* lines 6 and 7, *substitute*
V. agrestis β. *Sm. Fl. Græc.* 6. *t.* 8.
V. polita β. *Hook. Brit. Fl. ed.* 2. 8.
— 2783 and 2784. The numbers of the plates to which these descriptions refer are in some copies reversed.

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